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ABSTRACT

This report provides a profile of middle income undergraduates in comparison to their lower income and higher income counterparts and examines where middle income students enroll by price of attendance and how they and their families pay for college. Data are from the 1995-1996 National Postsecondary Student Aid Study (NPSAS:96). Middle income undergraduates are defined as those with family incomes between $35,000 and $69,999 in 1994. Thirty-seven percent of full-time, full-year (FTFY) undergraduates were defined as middle income. Middle income FTFY dependent undergraduates in 1995-1996 were 53% female, 81% White, non-Hispanic, and nearly all from families with at least three family members. About one third were first generation college students, and one quarter had parents with bachelor's degrees. Of FTFY dependent undergraduates, 8% were enrolled at the lowest price-of-attendance level colleges, 21% at moderate price institutions, 49% at upper price, and 23% at the highest price-of-attendance level. Virtually all families in the middle income group are expected to pay part of the price of attendance from their own resources. In 1995-1996, four out of five middle income FTFY dependent undergraduates had some financial need (after subtracting the expected family contribution), compared with almost all of those in the lower income category and one-third of those in the higher income category. One third of middle income FTFY dependent undergraduates with unmet need had not applied for financial aid, and reasons given included the belief that family income was too high or that the family could afford to pay. In 1995-1996, one-half of middle income FTFY dependent undergraduates with financial need received loans, and 52% received grants of some kind. Overall, findings show that lower income and middle income undergraduates have similar price of attendance enrollment patterns. (Contains 29 tables, 9 figures, and 13 references.) (SLD)

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Statistical Analysis Report August 2001

Postsecondary Education Descriptive Analysis Reports

Middle Income Undergraduates: Where They Enroll and How They Pay for Their Education

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EXECUTIVE SUMMARY

The need for financial aid or other financial help, such as tuition tax credits, to assist students from middle income families to attend the college of their choice has received increased attention recently. This report provides a profile of middle income undergraduates in comparison to their lower income and higher income counterparts and examines where middle income students enroll by price of attendance and how they and their families pay for college, including the role of financial aid.

The source of data for this analysis was the 1995–96 National Postsecondary Student Aid Study (NPSAS:96). The report is limited to full-time, full-year (FTFY) dependent undergraduates who were enrolled during 1995–96.

In this report, middle income undergraduates are defined as those with family incomes between $35,000 and $69,999 in 1994, the year of the income data included in the NPSAS:96 database. Undergraduates from families with incomes below $35,000 are defined as lower income, and those from families with incomes of $70,000 or more are defined as higher income. Thirty-seven percent of FTFY dependent undergraduates in the sample were middle income according to this definition, 35 percent were lower income and 28 percent were higher income.

Because the financing strategies that students use to pay for college vary by price of attendance, results are provided for four price-of-attendance levels: lowest price of attendance (less than $6,000), moderate price of attendance ($6,000 to $8,499), upper price of attendance ($8,500 to $15,999) and highest price of attendance ($16,000 or more). The price of attendance is the FTFY dependent undergraduate budget, which represents the total expected expenses for a FTFY dependent undergraduate to attend college in 1995–96, including tuition, fees, and nontuition expenses.

Profile of Middle Income Full-Time, Full-Year Dependent Undergraduates

Middle income FTFY dependent undergraduates in 1995–96 were 53 percent female, 81 percent white, non-Hispanic, and nearly all came from families with at least three family members. About one-third were first generation college students (i.e., their parents had no more than high school degrees as their highest level of education completed), one-quarter had parents with bachelor's degrees, 16 percent had parents with master's degrees, and 5 per-

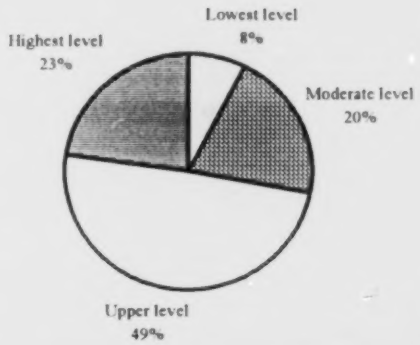
cent had parents with doctoral or first-professional degrees. Thirty-seven percent of middle income FTFY dependent undergraduates lived on campus, while 35 percent lived with their parents or relatives. Forty-five percent were first-year/freshmen.

PRICE OF ATTENDANCE

Price of attendance is the student budget for FTFY dependent undergraduates for 1995–96, including tuition and fees and total non-tuition costs. Of the middle income FTFY dependent undergraduates, 8 percent were enrolled at the *lowest price-of-attendance level*, 21 percent at the *moderate price-of-attendance level*, 49 percent at the *upper price-of-attendance level*, and 23 percent at the *highest price-of-attendance level* (figure A).

The percentages of FTFY dependent undergraduates from lower income and middle income families enrolling at each price-of-attendance level were about the same, but a smaller percentage of each of these two income groups (20 and 23 percent) was enrolled at the *highest price-of-attendance level* than of the higher income group (34 percent). Middle income FTFY dependent undergraduates with mid-range combined SAT scores of 825-1,199 were less likely to be enrolled at the *highest price-of-attendance level* than were those with similar SAT scores in the higher income group. Again, the enrollment of middle income and lower income FTFY dependent undergraduates by price-of-attendance level was about the same within the same SAT range. In all three income groups, the percentages of those with SAT scores of 1,200 or more that were enrolled at the *highest price-of-attendance level* were not statistically different, standing at 54 percent overall.

Figure A.—Percentage distribution of full-time, full-year dependent undergraduates from middle income families, by price-of-attendance level: 1995-96



NOTE: Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

Multivariate analysis showed that even after controlling for student background and family factors likely to affect enrollment at the *highest price-of-attendance level*, the percentage enrolled at this level was still lower for middle income FTFY dependent undergraduates attending the *highest price-of-attendance level* (23 percent) than their higher income counterparts (30 percent). Factors associated

with enrollment at the *highest price-of-attendance level*, in addition to family income, included being female, having parents whose highest level of education was a doctoral or first-professional degree, and having combined SAT scores of 1,200 or more.

FINANCIAL NEED AND FINANCIAL AID

Financial need is defined as student budget minus expected family contribution (EFC). EFC is the amount that the family and the student are expected to contribute toward the price of attendance, based on formulas for calculating financial aid awards.[1] Virtually all families in the middle income group are expected to pay part of the price of attendance from their own resources. The amount that remains after subtracting EFC is the student's financial need. It is possible that even after all aid is awarded, some students will have unmet need.

In 1995–96, four out of five middle income FTFY dependent undergraduates (79 percent) had some financial need, compared with almost all of those in the lower income category (99 percent), and one-third of those in the higher income category (table A). Middle income FTFY dependent undergraduates with financial need had an average of $7,785 of financial need.

Sixty-five percent of middle income FTFY dependent undergraduates received financial aid, 55 percent having financial need and 10 percent not having financial need. Overall, middle income FTFY dependent undergraduates had 31 percent of their price of attendance covered by financial aid, and more than one-half (58 percent) had unmet need after financial aid and expected family contribution (EFC).

One-third of middle income FTFY dependent undergraduates with unmet need had not applied for financial aid. Reasons given included a belief that family income was too high (32 percent) or that the family could afford to pay (48 percent). But for those who did apply for aid, but did not have their financial need met, it could mean that they and their families were making greater financial effort to attend their institution of choice.

Net price, or the difference between price of attendance and total financial aid received, is the amount of out-of-pocket expenses that students and their families must come up with to attend the colleges in which they enroll. By examining student earnings and the percentage

[1]Expected family contribution (EFC) is based on dependency, family size, income, assets and number in college. In order to calculate how much federal financial aid students can receive, federal regulations provide a methodology that assesses how much the family and the student should contribute towards the price of attendance. See Chapter 7 of the 1999-2000 Student Financial Aid Handbook, U.S. Department of Education, for more information.

Table A.—Financial status for all full-time, full-year dependent undergraduates, by family income: 1995-96

	Price of attendance at institution where enrolled	Expected family contribution (EFC) at any postsecondary institution[1,2]	Ratio of expected family contribution to price of attendance[2]	Percent with financial need	Amount of financial need[3] for those with need	Grant aid[2]	Total loan[2]	Net price[4] for all[2]	Percent with unmet need[5]	Unmet need[5] for those with unmet need
Total	$12,663	$8,697	77	72.6	$8,921	$2,230	$2,014	$8,113	57.6	$4,797
Family income										
Lower income	11,715	1,617	16	98.5	10,372	3,560	2,158	5,628	86.9	4,914
Middle income	12,284	6,865	68	78.6	7,785	1,873	2,229	7,867	58.3	4,375
Higher income	14,316	19,729	162	33.1	7,198	1,078	1,557	11,462	20.9	5,745

[1]Expected Family Contribution (EFC) may exceed actual student budget; therefore, the average EFC reported in this table cannot be used to calculate financial need and unmet need reported in this table.
[2]Includes zero values.
[3]Student budget minus EFC.
[4]Student budget minus all aid.
[5]Student budget minus EFC minus aid.

NOTE: Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

of students with parents contributing to their college expenses, we can gain an additional perspective on how students and their families cover college expenses.

The average net price for middle income FTFY dependent undergraduates in 1995–96 was $7,867. Net price increased as price-of-attendance level increased, but average student earnings were lowest at the highest price-of-attendance level.

At the *lowest price-of-attendance level*, student earnings for middle income FTFY dependent undergraduates averaged $4,478, the average net price of attendance was $4,581,[2] and 84 percent of these students reported that their parents contributed to their college expenses.[3] At the *moderate price-of-attendance level*, average student earnings for middle income FTFY dependent undergraduates of $3,737 covered a considerable amount of the $5,668 net price of attendance, while 88 percent of these students reported that their parents contributed to their college expenses. The amounts of parental contributions toward the net price of attendance are not known, but

[2]Students are not expected to contribute all of their earnings for the expected family contribution (EFC) or price of attendance. The actual amount contributed from earnings is not known, and some may contribute more or less than calculated for their EFC.

[3]For students and their families in the middle income group, virtually all are expected to make some contribution from their own resources toward paying for college.

the data suggest that middle income FTFY dependent undergraduates who were enrolled at the *lowest* and *moderate price-of-attendance levels* could meet or exceed the net prices of attendance with their own earnings and a modest contribution from their parents. Perhaps these students attended at the *lowest* and *moderate price-of-attendance levels* in order to reduce (but not eliminate) the amount of EFC that their parents needed to contribute, or to increase their available discretionary income, or both.

With a sizable gap between average net price ($7,632) and average student earnings ($3,419) for the 49 percent of middle income FTFY dependent undergraduates enrolled at the *upper price-of-attendance level*, 91 percent reported that their parents contributed toward expenses. EFC for middle income FTFY dependent undergraduates enrolled at this price-of-attendance level was $6,913. Thus, it appears that FTFY undergraduates attending at the *upper price-of-attendance level* can, on average, meet the net price of attendance through student earnings and parental contributions below EFC.

For the 23 percent of middle income FTFY dependent undergraduates enrolled at the *highest price-of-attendance level*, the gap between net price and student earnings was $8,919, which is more than the average EFC of $7,024 for these undergraduates' families. In addition, student earnings for middle income FTFY dependent undergraduates at the *highest price-of-attendance level* were lower than earnings for those at other price-of-attendance levels. At the highest price-of-attendance level, 96 percent of parents were reported to contribute to the price of attendance. Again, we do not know the actual amounts contributed by parents, but these data suggest that parents may have contributed amounts that exceeded their EFC by several thousand dollars. This gap between net price, student earnings, and EFC may explain why a smaller percentage of middle income FTFY dependent undergraduates with mid-range SAT scores were enrolled at the highest price-of-attendance level in comparison to those in the higher income group, with more financial resources to meet out-of-pocket expenses. Perhaps middle income parents, on average, made additional financial effort to pay for their dependents who were among the best scholastically, but did not make additional financial effort for those who were mid-range students scholastically. Another reason may be that institutions in the *highest price-of-attendance level* may not practice need-blind admissions, but balance applicants' academic strengths with their financial aid needs, resulting in fewer enrollees with mid-range scores who have higher financial need.

SOURCES OF FINANCIAL AID

In 1995–96, one-half of middle income FTFY dependent undergraduates with financial need received loans, accounting for 42 percent of their aid, while 52 percent received

grants, accounting for 44 percent of their aid, with work-study and other types of aid providing the remaining aid.

Institutional grants constituted the most common source of grant aid for middle income FTFY dependent undergraduates with financial need, as well as those in the higher income group. The percentages of FTFY dependent undergraduates with need who received institutional grants, as well as the average institutional awards that they received, were about the same for each family-income level. In each income category, larger percentages of FTFY dependent undergraduates with need received institutional grants if they were enrolled at the *highest price-of-attendance level*. At the *highest price-of-attendance level*, about two-thirds of those with need in the lower and middle income groups received institutional grants, compared with 46 percent of those in the higher income group. In addition, the average award was smaller for those in the higher income group. Institutional grants constituted an important component of financial aid packages that assisted in providing access at the *highest price-of-attendance level*, especially for lower and middle income undergraduates.

Overall, middle income FTFY dependent undergraduates with financial need were about as likely to borrow as their lower income counterparts, and the amounts they borrowed were about the same, but they were more likely to borrow than were their higher income counterparts. The percentage of middle income FTFY dependent undergraduates with need who borrowed was larger at each price-of-attendance level. For those with no financial need, the percentage borrowing was larger than the percentage borrowing from the higher income group.

SUMMARY

Lower income and middle income FTFY dependent undergraduates have similar price of attendance enrollment patterns. Those from the lower income and middle income group use more financial aid than do those in the middle income group. Lower income and middle income FTFY dependent students do not enroll at similar price-of-attendance levels as their counterparts in the higher income group, with the exception of those undergraduates with SAT scores of 1,200 or more.

FOREWORD

This report examines the characteristics of dependent middle income undergraduates who attended college full-time, full-year, and how they paid for their education. This report also compares these undergraduates with their lower and higher income counterparts. It examines strategies that these middle income undergraduates might have used to meet the gap between financial aid and financial need (unmet need). The report also looks at how they filled the gap between price of attendance and the amount of financial aid they received (out-of-pocket costs). Data are shown separately for those with financial need and no financial need, and by price of attendance.

The report uses data from the 1995–96 National Postsecondary Student Aid Study (NPSAS:96). NPSAS:96 is the fourth in a series of surveys conducted by the U.S. Department of Education. NPSAS:96 represents students of all ages and backgrounds at all types of postsecondary institutions (from less-than-2-year institutions that provide short-term vocational training to 4-year colleges and universities) who were enrolled during the 1995–96 academic year. The NPSAS surveys provide information about the price of postsecondary education and how students pay those prices.

The estimates presented in this report were produced using the NPSAS:96 Data Analysis System (DAS). The DAS is a microcomputer application that allows users to specify and generate their own tables from the NPSAS data. It produces the design-adjusted standard errors that are necessary for testing the statistical significance of differences shown in the tables. For more information regarding the DAS, readers should consult appendix C of this report.

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INTRODUCTION

Researchers (McPherson & Schapiro, 1998; King, 1999; Choy, 2000) have explored the effectiveness of student financial aid in meeting the needs of low-income undergraduates. These analyses have been appropriate to understanding this purpose of federal student aid but have not addressed a second key issue – affordability of college for middle income families. This report, therefore, addresses this gap and focuses on how student financial aid is used in assisting students of middle income families afford the college of their choice.

Key questions addressed in the report are:

- Who are middle income undergraduates?
- Do middle income undergraduates attend institutions with prices of attendance that are different from their lower income and higher income counterparts?
- How do middle income undergraduates pay for college?
- What financial aid sources are used by middle income undergraduates?

This report begins with a description of the data used and variable definitions. Later sections provide findings on the characteristics of middle income undergraduates in comparison to their lower income and higher income counterparts, analyze the different prices of attendance by income level and academic preparation, show how middle income undergraduates pay for college, and describe the financial aid awards of middle income undergraduates enrolled at different price-of-attendance levels.

DATA AND APPROACH TO ANALYSIS

The source of data for this analysis is the National Postsecondary Student Aid Study (NPSAS:96). These data provide a nationally representative sample of undergraduates enrolled in accredited postsecondary institutions. In order to simplify the analyses, they are limited to full-time, full-year dependent[4] undergraduates who were enrolled during 1995–96 and who were

[4]See Appendix B: Glossary for the definition of a dependent student.

eligible to apply for federal financial aid.[5] Therefore, only those who were U.S. citizens or permanent residents and who were eligible to apply for federal financial aid were included. Finally, to avoid the confounding effects of different prices of attending and varying types of aid, the 2.4 percent of these full-time, full-year dependent undergraduates who attended more than one institution in 1995–96 were excluded. The term "**FTFY dependent undergraduates**" is used throughout the report to represent the group of full-time, full-year dependent undergraduates who were U.S. citizens/permanent residents, and who attended one accredited postsecondary institution in 1995–96.[6]

Definition of Income Groups

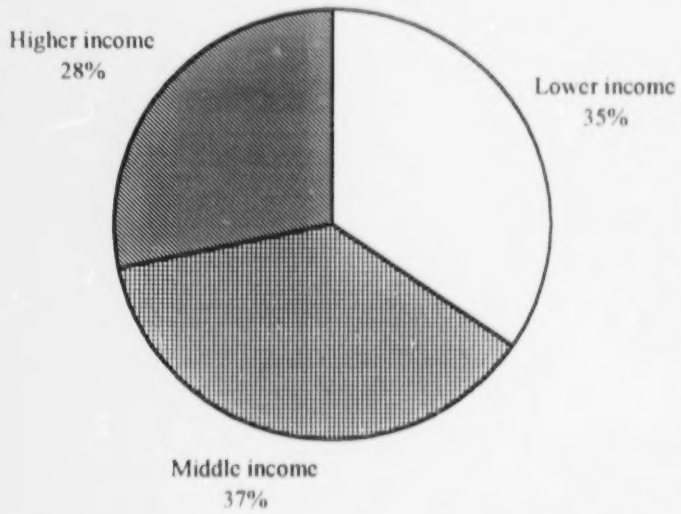
Middle income is defined as those with family incomes between $35,000 and $69,999 in 1994, the year of the income data included in NPSAS:96. The range for middle income needs to be narrow enough to reduce the variability within the group, but broad enough to reasonably represent a middle group of students. Thirty-seven percent of FTFY dependent undergraduates had family incomes between $35,000 and $69,999, and were middle income according to this definition (figure 1). Thirty-five percent of FTFY dependent undergraduates had family incomes below $35,000 and were defined as lower income, while 28 percent had family incomes of $70,000 or more, and were defined as higher income.

The $35,000 lower boundary for the middle income category divides students based upon the likelihood of attending a public, 4-year, nondoctoral-granting institution in 1995–96 without

[5]Sixty-six percent of citizen/permanent-resident dependent undergraduates who attended at least half-time for some period in 1995–96 (and therefore were eligible for federal financial aid) enrolled on a full-time, full-year (FTFY) basis. Those from higher income families were more likely to enroll as FTFY dependent undergraduates than were middle income dependent undergraduates (68 percent compared with 65 percent). There was no statistically significant difference in the rates of full-time enrollment for middle income and lower income citizen/permanent-resident dependent undergraduates attending at least half time.

[6]FTFY dependent undergraduates were 26.4 percent of all undergraduates, and 49.6 percent of dependent undergraduates included in NPSAS:96.

Figure 1.—Percentage distribution of full-time, full-year dependent undergraduates, by family income: 1995-96



NOTE: Dependent undergraduates are limited to those who attended only one institution and were U. S. citizens or permanent residents.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

a Pell grant,[7] the federal student financial aid program aimed at low-income families. Forty-six percent of FTFY dependent undergraduates in the $30,000 to $34,999 income group attending these institutions had Pell grants, compared with 20 percent in the $35,000 to $39,999 income group. About one-third of FTFY dependent undergraduates in the $30,000 to $34,999 income

[7]The Pell Grant program provides grants for students from low-income families. The maximum award for the 1999-2000 award year was $3,125. How much students get depends not only on their financial need, but on their cost of attending school, whether they are a full-time or part-time student, and whether they attend school for a full academic year or less. If students have financial need remaining after EFC, Federal Pell Grant eligibility, and aid from other sources are subtracted from their cost of attendance, they can borrow a Stafford Loan to cover all or some of that remaining need. The government will pay the interest on the loan while they are in school, for the first six months after they leave school, and when they qualify to have payments deferred. This type of loan is a subsidized loan. If students do not have financial need remaining, they may borrow a Stafford Loan for the amount of EFC or the annual Stafford Loan borrowing limit for their enrollment level, whichever is less. Students are then responsible for paying all of the interest on the loan. This type of loan is called an unsubsidized loan. Because an unsubsidized loan is not awarded on the basis of need, EFC is not taken into account. If students do not receive enough need-based aid to meet their cost of attendance, they can pay for some of their remaining costs with an unsubsidized loan. They are then charged interest from the time the loan is disbursed until it is paid in full. Students can receive a subsidized Stafford Loan and an unsubsidized Stafford Loan for the same enrollment period. See http://www.ed.gov/prog_info/SFA/FYE/FYE00/ for more details on federal financial aid programs.

group had Pell grants over $1,000. In the $34,999 to $40,000 income group, 9 percent had Pell grants over $1,000.[8] Those with family incomes below $35,000 are included in the lower income category in this report.

In earlier reports on low-income students, Choy (2000, 1996) defined low-income students as those whose family incomes were below 125 percent of the federally established poverty level for their family size. Sixteen percent of all FTFY dependent undergraduates had family incomes below 125 percent of the federally established poverty level for their family size (table 1). In comparison, the lower boundary for the middle income category for this analysis was set so that most families with incomes low enough to qualify for the federal grants program were placed in the lower income group. Using this definition, 45 percent of those in the current lower income group met Choy's definition of low-income, as did 0.03 percent of those in the middle income group and none of those in the higher income group.[9]

The $69,999 upper boundary for the middle income group captures aspects of institutional choice. It marks the income point beyond which most FTFY dependent undergraduates could afford to attend public, doctoral-granting institutions without a subsidized loan. More than one-quarter (27 percent) of those in the $65,000 to $69,999 income group who were attending these institutions had subsidized loans, compared with 12 percent of those in the $70,000 to $74,999 income group {t = 3.360}. Forty-three percent of those in the $70,000 to $74,999 income group used subsidized loans to attend private, not-for-profit, 4-year, nondoctoral-granting institutions. Most families in the higher income group had sufficient resources to choose among types of public and some private institutions without assistance from the federal subsidized loan program that targets middle income families.

[8]The apparent difference between 32 percent and 9 percent with Pell grants over $1,000 is not significant at the 0.05 level. The number of records in the two groups is relatively small, and the standard errors are large, therefore resulting in a t-value that is not statistically significant.

[9]Not shown in table; U.S. Department of Education, National Center for Education Statistics, 1995–96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

Table 1.—Percentage of full-time, full-year dependent undergraduates with family incomes in 1994 of less than 125 percent of poverty level, Pell grant status and Stafford subsidized loan status, by family income: 1995-96

	Percent with family income in 1994 of less than 125 percent of poverty level	Percent receiving Pell grant in public 4-year nondoctoral-granting institutions	Percent receiving Pell grant of $1,000 or more in public 4-year, nondoctoral-granting institutions	Percent receiving Stafford subsidized loan in public doctoral-granting institutions	Percent receiving Stafford subsidized loan in private, not-for-profit, 4-year nondoctoral-granting institutions
Total	15.6	26.9	21.4	30.9	51.6
Family income					
Less than $15,000	96.7	71.4	67.3	47.4	54.0
$15,000-$19,999	46.5	86.2	79.6	57.1	71.3
$20,000-$24,999	19.3	66.9	51.0	52.9	67.0
$25,000-$29,999	2.9	54.4	35.7	59.0	71.8
$30,000-$34,999	0.9	46.1	31.6	50.9	58.2
$35,000-$39,999	0.2	20.3	8.7	54.7	70.4
$40,000-$59,999	0.0	5.1	1.1	34.6	62.2
$60,000-$64,999	0.0	0.0	0.0	18.6	57.1
$65,000-$69,999	0.0	0.0	0.0	27.0	53.8
$70,000-$74,999	0.0	0.0	0.0	11.8	43.3
$75,000 or more	0.0	0.0	0.0	6.6	20.3

NOTE: Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

Definition of Price of Attendance

The following analyses present information describing the amounts, sources, and types of financial aid received by FTFY dependent undergraduates with different prices of attendance. Price of attendance is the student budget for FTFY dependent undergraduates for 1995–96, and includes tuition and fees and total nontuition costs.[10]

Four categories of price of attendance were established using 90 percent of the average student budget for those attending selected types of institutions. Institutional types were chosen based on the level of access to postsecondary education that they provided. The lowest price of attendance was based on the costs of obtaining less than a four-year degree at a public institution (the least expensive access to the postsecondary system). Moderate price of attendance was associated with the costs of obtaining a four-year degree at a nondoctoral public institution (the least

[10]Nontuition costs include books and supplies, room and board, transportation and personal expenses.

expensive baccalaureate education). Upper price of attendance was associated with obtaining a four-year degree at a nondoctoral private institution (a baccalaureate education with choice of attending some private institutions). By choosing the 90 percent mark, those with Expected Family Contributions[11] (EFCs) at that level or below could afford to attend some, but not the average institution, in that group without financial aid. The levels provide indicators of modest access to different levels of postsecondary education. The fourth, or highest price-of-attendance level included all the remaining student budgets above the upper boundary for the third price-of-attendance level.

- Lowest price-of-attendance level: dependent undergraduate budget less than $6,000

Forty-eight percent of middle income FTFY dependent undergraduates had EFCs of less than $6,000 (figure 2) so that, without aid, their EFCs would not enable them to attend the average public, less-than-4-year institution on a full-time basis.

- Moderate price-of-attendance level: dependent undergraduate budget $6,000 to $8,499

Twenty-two percent of middle income FTFY dependent undergraduates had EFCs between $6,000 and $8,499 so that, without aid, their EFCs would enable them to attend public, less-than-4-year institutions and less-expensive baccalaureate institutions on a full-time basis.

- Upper price-of-attendance level: dependent undergraduate budget $8,500 to $15,999

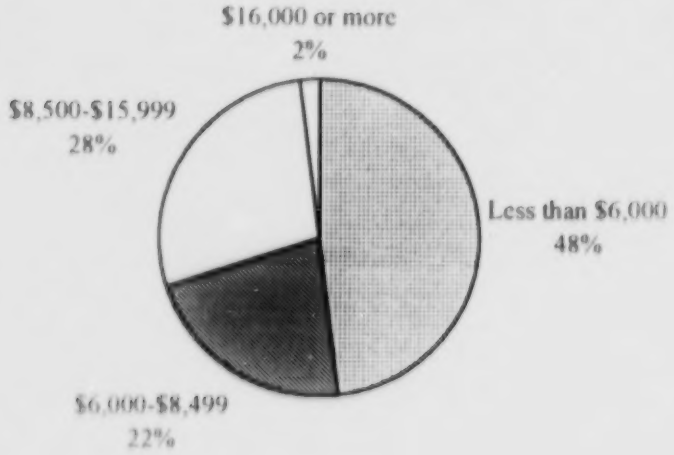
Twenty-eight percent of middle income FTFY dependent undergraduates had EFCs between $8,500 and $15,999, so that, without aid, their EFCs would enable them to attend 4-year institutions, and have some choice of attending public or private institutions.

- Highest price-of-attendance level: dependent undergraduate budget $16,000 or more

Two percent of middle income FTFY dependent undergraduates had EFCs of $16,000 or more, indicating that they had family resources that could allow them to attend at the highest price-of-attendance level without aid.

[11]Expected Family Contribution (EFC) is a measure of how much the student and his or her family can be expected to contribute to the price of the student's education. The EFC is calculated according to a formula specified in the law. See Chapter 7 of the 1999-2000 Student Financial Aid Handbook, U.S. Department of Education, for more information.

Figure 2.—Percentage distribution of full-time, full-year dependent undergraduates from middle income families, by expected family contribution: 1995-96

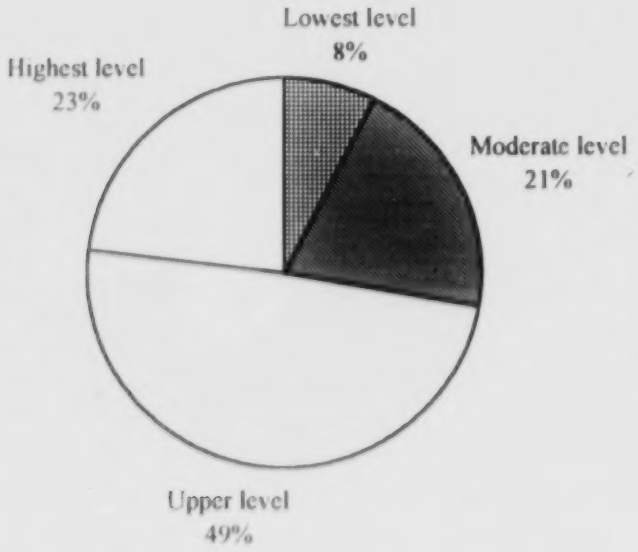


NOTE: Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

While almost one-half of middle income FTFY dependent undergraduates had EFCs that did not meet the price of attending at the lowest price-of-attendance level, 8 percent actually were enrolled in the lowest price-of-attendance category in 1995–96 (figure 3). Another 20 percent were in the moderate price-of-attendance category, while almost one-half (49 percent) were in the upper price-of-attendance category. On the other hand, while only two percent of middle income FTFY dependent undergraduates had family resources sufficient to pay for enrollment at the highest price-of-attendance level, 23 percent actually were enrolled at that price level. The following chapters explore, in detail, financial aid and other financial strategies used to cover the additional expenditures incurred when FTFY dependent undergraduates attend institutions with prices above what they can "afford" based upon their EFC.

Figure 3.—Percentage distribution of full-time, full-year dependent undergraduates from middle income families, by price-of-attendance level: 1995-96



NOTE: Percentages may not sum to 100 due to rounding. Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

Ninety-one percent of FTFY dependent undergraduates enrolled at the lowest price-of-attendance level were in public, less-than-4-year institutions (table 2). Those enrolled at the moderate price-of-attendance level were in a mixed group of institutions, including 40 percent in public, less-than-4-year institutions, 31 percent in public 4-year, nondoctoral-granting institutions, and 24 percent in public doctoral-granting institutions. More than one-half (52 percent) of FTFY dependent undergraduates enrolled at the upper price-of-attendance level were enrolled in public doctoral-granting institutions, 23 percent were in public 4-year, nondoctoral institutions, and 10 percent were in private not-for-profit, 4-year, nondoctoral-granting institutions. Forty-six percent of those with the highest price of attendance were in private not-for-profit, 4-year, non-

doctoral-granting institutions, 36 percent were in private not-for-profit, doctoral-granting institutions and 16 percent were in public doctoral-granting institutions.[12]

Table 2.—Percentage distribution of full-time, full-year dependent undergraduates according to institution type and highest degree, by price-of-attendance level: 1995-96

	Public, less-than-4-year	Public 4-year, nondoctoral-granting	Public doctoral-granting	Private not-for-profit, less-than-4-year	Private not-for-profit, 4-year, nondoctoral-granting	Private not-for-profit, doctoral-granting	Private, for-profit
Total	18.6	17.5	33.7	0.8	17.2	9.8	2.5
Price-of-attendance level							
Lowest level	90.8	4.1	4.5	0.0	0.1	0.0	0.5
Moderate level	39.8	30.6	23.8	0.4	4.1	0.4	0.9
Upper level	7.9	23.1	52.1	1.4	10.4	1.7	3.5
Highest level	0.0	0.8	15.6	0.3	45.5	35.6	2.3

NOTE: Percentages may not sum to 100 due to rounding. Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

Definition of Financial Need, Unmet Need, and Net Price

Financial need is the difference between EFC and student budget (price of attendance). Federal financial aid awarded on the basis of financial need is designed to help fill the gap between EFC and price of attendance. However, the combination of financial aid from all sources and EFC may not be adequate to cover the student budget. FTFY dependent undergraduates with additional financial need, after considering EFC and financial aid, are defined as having **unmet need**. FTFY dependent undergraduates are classified by income level, and whether they have financial need. Analysis is also undertaken based on **net price**, which is defined as price of attendance minus financial aid (including loans, which do not need to be repaid from current-year funds). Net price represents the amount of money that students and their families have to come up with during a given year in order for the student to enroll.

[12]Some FTFY dependent undergraduates paid out-of-state tuition and fees at public institutions where tuition and fees plus other costs of attendance were sometimes $16,000 or more in 1995–96.

Significance of Reported Differences

Comparisons were made in this report only when they achieved significance to the 95 percent confidence level. See Appendix C, Statistical Procedures for a detailed discussion of significance testing.

PROFILE OF MIDDLE INCOME FULL-TIME, FULL-YEAR DEPENDENT UNDERGRADUATES

Middle income full-time, full-year (FTFY) dependent undergraduates were 53 percent female, 81 percent white, non-Hispanic, and nearly all came from families with at least three family members[13] (table 3). About one-third (35 percent) of their parents had high school degrees as their highest education level completed, while one-quarter had bachelor's degrees. Sixteen percent had master's degrees and 5 percent had doctoral or first-professional degrees. Thirty-seven percent of middle income FTFY dependent undergraduates lived on campus, while 35 percent lived with their parents or relatives. Four characteristics differentiated middle income FTFY dependent undergraduates from lower income FTFY dependent undergraduates. In comparison to lower income FTFY dependent undergraduates, a larger percentage of the middle income group were white, non-Hispanic (81 percent compared with 57 percent) and a smaller percentage came from two-person families (4 percent compared with 14 percent). More than one-half of lower income FTFY dependent undergraduates' parents were either high school graduates (49 percent) or had less than a high-school degree (7 percent), compared with 35 percent and 2 percent respectively for middle income FTFY dependent undergraduates. Finally, middle income FTFY dependent undergraduates had an average combined Scholastic Assessment Test (SAT) score 50 points higher than those from the lower income group (934 compared with 884) (table 4). The distribution of SAT scores showed a smaller percentage of middle income FTFY dependent undergraduates with scores below 825 (30 percent) compared with those in the lower income group (40 percent), and a larger percentage with SAT scores in the 1,000-1,199 range compared with lower income FTFY dependent undergraduates (30 percent compared with 22 percent).

Middle income FTFY dependent undergraduates also differed from their higher income counterparts. A smaller percentage of middle income FTFY dependent undergraduates than those in the higher income group were white, non-Hispanic (81 percent compared with 87 percent) (table 3), a larger percentage were living with their parents or relatives (35 percent compared with 26 percent), and a smaller percentage were living off campus (29 percent compared with 33 percent). Furthermore, a smaller percentage of middle income FTFY dependent under-

[13]Refer to Appendix B for the definition of family and family member.

graduates were fourth-year/seniors[14] than were higher income FTFY dependent undergraduates (14 percent compared with 17 percent). Parents' educations distinguished middle income FTFY dependent undergraduates from those from higher income families. Thirty-five percent of middle income FTFY dependent undergraduates had parents with high school educations as their highest level completed, compared with 15 percent of higher FTFY dependent undergraduates. Three times as many parents of higher income FTFY dependent undergraduates had doctoral or first-professional degrees, compared with middle income parents (15 percent compared with 5 percent). Finally, a larger percentage of middle income FTFY dependent undergraduates worked while enrolled than did those in the higher income group (78 percent compared with 68 percent).

The average combined SAT score of middle income FTFY dependent undergraduates was 56 points lower than that of the higher income group (table 4). The percentage of middle income FTFY dependent undergraduates with SAT scores below 825 was larger than for the higher income group (30 percent compared with 21 percent), while the percentage with scores of 1,200 or more was smaller than for higher income FTFY dependent undergraduates (10 percent compared with 17 percent). Finally, middle income FTFY dependent undergraduates had taken fewer Advanced Placement (AP) courses, on average, than those in the higher income group (0.5 compared with 0.9).

[14]The fourth-year/senior category includes those who were fifth-year or higher and those who were seniors or graduated in 1995-96.

Table 3.—Percentage distribution of full-time, full-year dependent undergraduates according to family income, by selected characteristics: 1995-96

	All full-time, full-year dependent undergraduates	Family income		
		Lower income	Middle income	Higher income
Total	100.0	100.0	100.0	100.0
Gender				
Male	46.7	43.8	47.1	49.9
Female	53.3	56.2	52.9	50.1
Race/ethnicity				
White, non-Hispanic	74.3	56.9	80.8	86.8
Black, non-Hispanic	8.9	16.1	6.6	3.1
Hispanic	8.3	15.4	5.2	3.7
Asian/Pacific Islander	7.0	9.6	5.9	5.2
American Indian/Alaskan Native	0.7	1.1	0.8	0.2
Other	0.9	1.0	0.7	1.0
Parent family size*				
Two	7.1	14.2	4.1	2.2
Three	28.2	29.7	28.1	26.3
Four	35.4	28.7	38.4	39.8
Five or more	29.4	27.4	29.3	31.7
Highest education completed by either parent				
Less than high school	3.4	7.4	1.6	0.5
High school graduate	34.9	49.4	34.9	14.7
Some postsecondary education	16.2	15.9	18.4	13.3
Bachelor's degree	23.5	17.7	24.5	30.0
Master's degree	15.1	6.1	15.6	26.8
Doctoral or first-professional degree	7.0	3.5	5.0	14.7
Student housing status				
On campus	36.5	33.3	36.5	40.5
Off campus	29.7	27.8	29.0	33.1
With parents or relatives	33.7	38.8	34.5	26.4
Worked while enrolled				
Did work while enrolled	73.9	74.5	77.8	68.1
Worked 1-19 hours per week while enrolled	30.8	30.2	31.7	30.2
Worked 20-29 hours per week while enrolled	25.4	26.2	26.9	22.3
Worked 30 or more hours per week while enrolled	17.7	18.1	18.9	15.6
Did not work while enrolled	26.1	25.5	22.5	31.9

Table 3.—Percentage distribution of full-time, full-year dependent undergraduates according to family income, by selected characteristics: 1995-96—Continued

	All full-time, full-year dependent undergraduates	Family income		
		Lower income	Middle income	Higher income
Undergraduate level				
First-year/freshman	43.2	43.7	44.6	40.8
Second-year/sophomore	22.3	24.0	21.9	20.9
Third-year/junior	18.6	17.5	18.4	20.4
Fourth-year/senior	14.9	13.7	14.3	17.3
Other	1.0	1.2	0.9	0.7

*Includes the number of people the respondent's parent(s) supported between July 1, 1995 and June 30, 1996. Includes respondent and respondent's parent(s).

NOTE: Percentages may not sum to 100 due to rounding. Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

Table 4.—Average number of Advanced Placement (AP) tests taken and Scholastic Assessment Test (SAT) combined score for full-time, full-year dependent undergraduates, by family income: 1995-96

	Number of AP tests taken	SAT combined score	Percentage with SAT combined score of:			
			Less than 825	825-999	1,000-1,199	1,200 or higher
Total	0.6	935	30.8	30.2	27.7	11.3
Family income						
Lower income	0.4	884	39.8	30.2	21.9	8.2
Middle income	0.5	934	30.4	30.6	29.5	9.5
Higher income	0.9	990	21.4	29.7	31.8	17.1

NOTE: Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

PRICE OF ATTENDANCE

The Institute for Higher Education Policy (1999) stated that while one of the defined purposes of financial aid, especially federal financial aid, is to increase enrollment in postsecondary education for those who could not otherwise afford to attend, financial aid also is designed to provide students with access to institutions of different prices, and to help students and their families keep pace with rising tuition levels. This section describes the price-of-attendance levels in which full-time, full-year (FTFY) dependent undergraduates were enrolled in 1995–96, and examines whether differences existed by family income. The section concludes with an analysis of the relationship of FTFY dependent undergraduates' SAT scores to the price of attendance and family income.

PRICE OF ATTENDANCE AND TYPE OF INSTITUTION

The percentage of middle income FTFY dependent undergraduates in each of the price-of-attendance categories (8, 21, 49, and 23 percent) did not differ significantly from lower income families (table 5). In contrast, more higher income FTFY dependent undergraduates were enrolled in the highest price-of-attendance level (34 percent), and fewer in the moderate price-of-attendance level (14 percent), than were middle income FTFY dependent undergraduates. About one-half of FTFY dependent undergraduates in each income category were enrolled in the upper price-of-attendance level in 1995–96.

The probability of attendance by institution type was about the same for middle income and lower income FTFY dependent undergraduates, with the exception that more of those in the lower income group attended private, for-profit institutions (4 percent compared with 2 percent). One-third of middle income FTFY dependent undergraduates attended public, doctoral-granting institutions in 1995–96, while a larger percentage of FTFY dependent undergraduates from higher income families attended these institutions (39 percent). Twenty-one percent of middle income FTFY dependent undergraduates enrolled in public, less-than-4-year institutions, while less than the 13 percent enrolled from the higher income group. A smaller percentage of middle income FTFY dependent undergraduates were enrolled in private, not-for-profit, doctoral-granting institutions than were those in the higher income group (9 percent compared with 15 percent).

Table 5.—Percentage distribution of full-time, full-year dependent undergraduates according to family income, by selected institutional characteristics: 1995-96

	All full-time, full-year dependent undergraduates	Family income		
		Lower income	Middle income	Higher income
Total	100.0	100.0	100.0	100.0
Price-of-attendance level				
Lowest level	7.8	11.2	7.5	4.0
Moderate level	19.6	23.5	20.5	13.9
Upper level	47.4	45.2	49.2	47.9
Highest level	25.1	20.1	22.8	34.3
Institution type and highest degree				
Public, less-than-4-year	18.6	21.1	20.8	12.7
Public, 4-year, nondoctoral-granting	17.5	19.0	18.1	14.7
Public, doctoral-granting	33.7	30.2	32.6	39.3
Private, not-for-profit, less-than-4-year	0.8	0.9	0.8	0.6
Private, not-for-profit, 4-year, nondoctoral-granting	17.2	17.8	17.1	16.5
Private, not-for-profit, doctoral-granting	9.8	7.3	8.5	14.6
Private, for-profit	2.5	3.6	2.0	1.6

NOTE: Percentages may not sum to 100 due to rounding. Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

In summary, FTFY dependent undergraduates from middle income families were about as likely as those from lower income families to enroll at different price-of-attendance levels. FTFY dependent undergraduates from middle income families were less likely to enroll at the highest price-of-attendance level of $16,000 and above than those from higher income families.

FAMILY INCOME, ACADEMIC PREPARATION, AND PRICE OF ATTENDANCE

Researchers (Hossler, Braxton & Coopersmith, 1989; Hearn, 1984, 1988) have found that undergraduates choose colleges based not only on the total and net price of attendance, but also on other attributes of the institution and their families. These include location, programs available, perceived fit between students' academic background and institutional selectivity, and parents' level of education. Some institutions, in turn, are able to select from among a large supply of qualified applicants to fill their available spaces, and average SAT scores are one measure of this selectivity. Furthermore, price of attendance and selectivity are related. Twenty-two percent of FTFY dependent undergraduates in the highest price-of-attendance level in 1995–96 had combined SAT scores of 1,200 or more (table 6). Another 36 percent had scores in the 1,000-

1,199 range, compared with 9 percent and 28 percent respectively in the upper price-of-attendance level, and 3 percent and 19 percent respectively in the moderate price-of-attendance level.

Table 6.—Percentage distribution of full-time, full-year dependent undergraduates according to Scholastic Assessment Test (SAT) combined score, by price-of-attendance level: 1995-96

	Less than 825	825-999	1,000-1,199	1,200 or higher
Total	30.8	30.2	27.7	11.3
Price-of-attendance level				
Lowest level	59.3	26.9	11.3	2.6
Moderate level	45.6	32.2	18.9	3.3
Upper level	30.0	32.3	28.4	9.3
Highest level	15.5	26.0	36.3	22.2

NOTE: Percentages may not sum to 100 due to rounding. Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

The question to be examined in this section is whether the differences in enrollment patterns between middle income and higher income FTFY dependent undergraduates persist even when taking into account the differences in SAT scores by family incomes shown earlier (table 4). The relationship between the number of AP tests taken, average and percentage distribution of SAT scores, family incomes and price-of-attendance levels is examined, followed by a multivariate analysis that includes consideration of the interaction among FTFY dependent undergraduates' individual and family characteristics and the probability of being enrolled in the highest price-of-attendance level.

At the two least expensive price-of-attendance levels, middle income FTFY dependent undergraduates had a higher average combined SAT score than did those in the lower income group (table 7). There were no differences in average SAT scores of middle income and higher income FTFY dependent undergraduates at these two price-of-attendance levels. Middle income FTFY dependent undergraduates at the upper price-of-attendance level had a lower average combined SAT score than those in the higher income group but higher than those in the lower income group. At the highest price-of-attendance level, middle income FTFY dependent undergraduates' average SAT score was lower than those in the higher income group, but was about the same as the lower income group. Middle income FTFY dependent undergraduates in the up-

per and highest price-of-attendance levels had taken fewer AP courses than those in the higher income group.

Table 7.—Average Scholastic Assessment Test (SAT) combined score and number of Advanced Placement (AP) tests taken by full-time, full-year dependent undergraduates according to price-of-attendance level, by family income: 1995-96

	SAT combined score	Number of AP tests taken
	All	
Total	935	0.6
Family income		
Lower income	884	0.4
Middle income	933	0.5
Higher income	990	0.9
	Lowest level	
Total	776	0.1
Family income		
Lower income	730	0.1
Middle-income	830	0.2
Higher income	749	--
	Moderate level	
Total	851	0.3
Family income		
Lower income	816	0.2
Middle income	861	0.3
Higher income	893	0.3
	Upper level	
Total	930	0.5
Family income		
Lower income	884	0.4
Middle-income	936	0.5
Higher income	972	0.8

Table 7.—Average Scholastic Assessment Test (SAT) combined score and number of Advanced Placement (AP) tests taken by full-time, full-year dependent undergraduates according to price-of-attendance level, by family income: 1995-96—Continued

	SAT combined score	Number of AP tests taken
	Highest level	
Total	1,035	1.1
Family income		
Lower income	1,002	0.9
Middle income	1,021	0.8
Higher income	1,070	1.4

--Sample size too small for reliable estimate

NOTE: Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

Another way to look at the relationship between family income, price of attendance, and SAT scores is whether undergraduates with similar scores enroll at similar price-of-attendance levels, independent of family income. Table 8 shows the percentage distribution of FTFY dependent undergraduates by income level and average combined SAT score across the four price-of-attendance levels.

The percentage distribution of middle income FTFY dependent undergraduates within each SAT-score grouping by price of attendance differed from the distribution of those in the higher income group in several instances. For those with combined SAT scores between 825 and 999, and for those with SAT scores between 1,000 and 1,199, a smaller percentage of middle income FTFY dependent undergraduates than those in the higher income group were in the highest price-of-attendance level (21 percent compared with 31 percent, and 31 percent compared with 41 percent respectively). In the highest price-of-attendance level, there was no statistically significant difference in the percentages of middle income and higher income FTFY dependent undergraduates enrolled from the combined lowest SAT-score category, or the highest SAT-score category. The percentages of those with SAT scores of 1,200 or more in each income group that

were enrolled at the highest price-of-attendance level were not statistically different, standing at 54 percent overall.[15]

To summarize, middle income FTFY dependent undergraduates with mid-range combined SAT scores of 825-1,199 were less likely to be enrolled at the highest price-of-attendance level than were those in the higher income group. However, the percentage distribution of middle income FTFY dependent undergraduates at each SAT-score level and price-of-attendance level was about the same as the distribution of those in the lower income group.

Table 8.—Percentage distribution of full-time, full-year dependent undergraduates according to price-of-attendance level, by combined Scholastic Assessment Test (SAT) score and family income: 1995-96

	Price-of-attendance level			
	Lowest	Moderate	Upper	Highest
		All		
Total	7.8	19.6	47.4	25.1
Family income				
Lower income	11.2	23.5	45.2	20.1
Middle income	7.5	20.5	49.2	22.8
Higher income	4.0	13.9	47.9	34.3
		Less than 825 SAT		
Total	12.6	26.6	46.9	13.9
Family income				
Lower income	14.0	27.6	46.5	12.0
Middle-income	12.0	28.2	45.9	13.9
Higher income	11.0	21.8	49.6	17.6
		825-999 SAT		
Total	5.8	19.1	51.3	23.7
Family income				
Lower income	6.8	20.2	52.8	20.2
Middle income	6.5	22.2	50.1	21.2
Higher income	3.8	13.9	51.4	30.9

[15]While there appears to be a large difference between the percentage for middle income and higher income FTFY dependent undergraduates enrolled at the highest price-of-attendance level, the percentages are associated with large standard errors and are, therefore, not statistically different.

Table 8.—Percentage distribution of full-time, full-year dependent undergraduates according to price-of-attendance level, by combined Scholastic Assessment Test (SAT) score and family income: 1995-96—Continued

	Price-of-attendance level			
	Lowest	Moderate	Upper	Highest
		1,000-1,199 SAT		
Total	2.7	12.2	49.2	36.0
Family income				
Lower income	3.0	14.3	46.4	36.3
Middle-income	4.4	13.4	50.9	31.3
Higher income	0.3	9.3	49.1	41.3
		1,200 or higher SAT		
Total	1.5	5.2	39.4	54.0
Family income				
Lower income	0.9	6.5	41.2	51.4
Middle income	3.9	6.6	41.1	48.4
Higher income	0.0*	3.6	37.1	59.3

NOTE: Percentages may not sum to 100 due to rounding. Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents.

*This is a true zero, there are no cases for this group.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

In order to determine whether the lower probability of middle income FTFY dependent undergraduates enrolling at the highest price-of-attendance level was associated with family income independent of other individual and family characteristics, a multivariate analysis was conducted using a regression model.[16] In addition to family income, the model included a number of independent variables that describe students' background and family characteristics. The first column in table 9 shows the percentage of FTFY dependent undergraduates who were enrolled at the highest price-of-attendance level in 1995–96, before the percentages were adjusted. The second column shows the corresponding percentages after being adjusted for the covariation of the independent variables included in the regression equation. Asterisks indicate when a particular group differs significantly from the comparison group (shown in italics).

[16]See appendix C for details on the methods used.

Table 9.—Percentage of full-time, full-year dependent undergraduates who enrolled at the highest price-of-attendance level in 1995-96, and the adjusted percentage after controlling for the covariation of the variables listed in the table

	Unadjusted percentages[1]	Adjusted percentages[2]	Least squares coefficient[3]	Standard error[4]
Total	25.1	25.1	37.2	6.8
Family income				
Lower income	20.1	23.2	-0.0	2.2
Middle income[5]	*22.8*	*23.3*	†	†
Higher income	34.3 *	29.9 *	6.6	2.2
Gender				
Female	26.3	27.3 *	4.7	1.8
Male	23.8	22.6	†	†
Highest education completed by either parent				
Less than high school	*12.8*	*19.5*	†	†
High school graduate	18.3	24.1	4.6	5.1
Some postsecondary education	16.7	20.6	1.1	5.4
Bachelor's degree	24.9 *	24.7	5.2	5.3
Master's degree	31.9 *	28.5	9.0	5.6
Doctoral or first-professional degree	45.4 *	37.5 *	18.0	6.1
Parent family size				
Two	*21.8*	*25.3*	†	†
Three	24.2	25.1	-0.2	3.7
Four	26.5	25.4	0.1	3.7
Five or more	25.2	24.8	-0.4	3.7
Race/ethnicity				
White, non-Hispanic	*26.4*	*25.0*	†	†
Black, non-Hispanic	17.0 *	25.4	0.5	3.2
Hispanic	14.3 *	20.4	-4.6	3.4
Asian/Pacific Islander	35.0	31.6	6.6	3.5
American Indian/Alaskan Native	15.2	20.2	-4.8	10.4
Other	32.7	31.6	6.7	9.4
Scholastic Assessment Test (SAT) combined score				
Less than 825	13.9 *	14.0 *	-33.2	3.2
825-999	23.7 *	21.5 *	-25.7	3.1
1,000-1,199	36.0 *	32.5 *	-14.7	3.1
1,200 or more	*54.0*	*47.1*	†	†

*$p < .05$.
†Not applicable for the reference group.
[1]The estimates are from the NPSAS:96 Undergraduate Data Analysis System.
[2]The percentages are adjusted for differences associated with other variables in the table (see appendix C).
[3]Weighted least squares (WLS) coefficient, multiplied by 100 to reflect percentage (see appendix C).
[4]Standard error of WLS coefficient, adjusted for design effect, multiplied by 100 to reflect percentage (see appendix C).
[5]The italicized group in each category is the reference group being compared.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995–96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

The results show that even after controlling for student background and family factors likely to affect enrollment at the highest price-of-attendance level, the percentage of middle income FTFY dependent undergraduates so enrolled still was lower than their higher income counterparts. The unadjusted enrollment percentages for middle income and higher income FTFY dependent undergraduates were 23 percent and 34 percent, respectively. After adjustment, 23 percent of middle income and 30 percent of higher income FTFY dependent undergraduates enrolled at the highest price-of-attendance level. Middle income FTFY dependent undergraduates continued to enroll at the highest price-of-attendance level at the same rates as their lower income counterparts, both before and after adjustment for covariation (23 percent compared with 20 percent, respectively, and 23 percent compared with 23 percent after adjustment.)

The model does not include many factors that affect enrollment at the highest price-of-attendance level. However, of the factors included in the model, those associated with enrollment at the highest price of attendance, in addition to family income, included being female, having parents whose highest level of education was a doctoral or first-professional degree, and combined SAT scores of 1,200 or more.

Summary

The percentages of FTFY dependent undergraduates from lower income and middle income families enrolling at different price-of-attendance levels were not significantly different. Middle income FTFY dependent undergraduates were less likely to enroll at the highest price-of-attendance level of $16,000 and above than were those from higher income families.

At the lowest, moderate, and upper price-of-attendance levels, middle income FTFY dependent undergraduates had higher average combined SAT scores than did those in the lower income group, while the average combined SAT scores of the lower income and middle income groups in the highest price-of-attendance level were not significantly different. Middle income FTFY dependent undergraduates enrolled in the upper and highest price-of-attendance levels had lower average combined SAT scores than those in the higher income group. Furthermore, middle income FTFY dependent undergraduates in the highest price-of-attendance category had taken fewer AP courses than had those in the higher income group.

Middle income FTFY dependent undergraduates with mid-range combined SAT scores of 825-1,199 were less likely to be enrolled at the highest price-of-attendance level than were those in the higher income group. However, the percentage distribution of middle income FTFY

dependent undergraduates at each SAT-score level and price-of-attendance level was about the same as the distribution of those in the lower income group.

Multivariate analysis showed that even after controlling for student background and family factors likely to affect enrollment at the highest price-of-attendance level, the percentage of middle income FTFY dependent undergraduates so enrolled was lower than their higher income counterparts. Factors associated with enrollment at the highest price-of-attendance level, in addition to family income, included being female, having parents whose highest level of education was a doctoral or first-professional degree, and combined SAT scores of 1,200 or more.

In conclusion, it appears that middle income FTFY dependent undergraduates with average scholastic characteristics, as measured by SAT scores, as well as those from lower income families, were less likely to be enrolled at the highest price-of-attendance level than were those with similar scholastic attributes who were from higher income families. There were no significant differences by family income in the percentages of those with combined SAT scores of 1,200 or more who were enrolled at the highest price-of-attendance level.

PAYING FOR COLLEGE

Full-time, full-year (FTFY) dependent undergraduates and their families typically pay for college through a combination of family support, grants (some of which are need-based), subsidized and unsubsidized student loans, parental loans, and student earnings. Undergraduates may reduce prices of attendance by attending institutions with lower prices, but this increases the share of expenses that is expected to be met from expected family contribution (EFC), since EFC is based on family resources independent of college prices. Using the federal financial aid methodology, when EFC meets or exceeds the price of attendance, a student is deemed to have no financial need.

The average price of attendance for middle income FTFY dependent undergraduates was $12,284 in 1995–96, which was not statistically significantly different from the $11,715 average price of attendance of those in the lower income group, but was less than the $14,316 for those in the higher income group (table 10). Average EFC was $6,865 for middle income FTFY dependent undergraduates and the average net price after all financial aid was $7,867.

Meeting Financial Need

Financial need is calculated by subtracting a student's EFC from the institutionally determined budget (price of attendance). This represents the amount of financial aid for which the student is eligible. Some students may receive total financial aid packages that are less than the aid for which they are eligible. On the other hand, institutions are not bound by the federally determined calculation of need in the award of institutional aid to those who do not receive federal need-based aid, nor are they constrained to award aid solely on the basis of financial need, so undergraduates may receive a total financial aid package that exceeds the federally determined calculation of need.

Figure 4 shows the percentages of middle income FTFY dependent undergraduates with financial need, applying for aid, receiving aid, and having unmet need. The percentages in parentheses represent all middle income FTFY dependent undergraduates in that row who are included in the particular box. By adding across the row that provides information, on applying for aid, for example, we can calculate that 60 percent + 12 percent = 72 percent of all middle income FTFY dependent undergraduates applied for financial aid in 1995–96.

Four out of five (79 percent) middle income FTFY dependent undergraduates had some financial need, compared with almost all of those in the lower income category (99 percent), and one-third of those in the higher income category (table 10). Middle income FTFY dependent undergraduates with need had an average of $7,785 of financial need in 1995–96.

Sixty-five percent of middle income FTFY dependent undergraduates received financial aid in 1995–96, 55 percent having financial need, and 10 percent not having financial need (figure 4). Ninety-one percent of middle income FTFY dependent undergraduates with need who applied for aid received some aid, as did 78 percent of those with no financial need. Overall, middle income FTFY dependent undergraduates had 31 percent of their price of attendance covered by financial aid (table 10).

Table 10.—Financial status for all full-time, full-year dependent undergraduates, by price-of-attendance level and family income: 1995-96

	Price of attendance at institution where enrolled	Expected family contribution (EFC) at any postsecondary institution[1,2]	Percent with financial need[3]	Amount of financial need for those with financial need	Net price[4] for all[2]	Percent with unmet need[5]	Unmet need[5] for those with unmet need	Ratio of total aid to price of attendance for all[2]
				All				
Total	$12,663	$8,697	72.6	$8,921	$8,113	57.6	$4,797	33.5
Family income								
Lower income	11,715	1,617	98.5	10,372	5,628	86.9	4,914	49.0
Middle income	12,284	6,865	78.6	7,785	7,867	58.3	4,375	31.2
Higher income	14,316	19,729	33.1	7,198	11,462	20.9	5,745	17.8
				Lowest level				
Total	5,243	5,107	64.0	3,669	3,874	57.5	2,085	26.5
Family income								
Lower income	5,152	1,200	95.8	4,237	2,972	86.2	2,262	42.4
Middle-income	5,292	6,569	42.2	2,048	4,581	37.4	1,605	13.5
Higher income	5,435	14,986	8.5	--	5,227	8.5	--	3.8
				Moderate level				
Total	7,255	6,612	65.5	4,842	5,200	54.8	2,910	28.1
Family income								
Lower income	7,186	1,281	99.6	5,970	4,080	89.2	3,271	42.9
Middle income	7,255	6,682	59.8	3,010	5,668	44.3	2,200	21.4
Higher income	7,398	17,458	6.3	--	6,603	4.1	--	10.4

Table 10.—Financial status for all full-time, full-year dependent undergraduates, by price-of-attendance level and family income: 1995-96—Continued

	Price of attendance at institution where enrolled	Expected family contribution (EFC) at any postsecondary institution[1,2]	Percent with financial need[3]	Amount of financial need for those with financial need	Net price[4] for all[2]	Percent with unmet need[5]	Unmet need[5] for those with unmet need	Ratio of total aid to price of attendance for all[2]
				Upper level				
Total	11,204	8,736	70.2	7,360	7,460	54.6	4,150	32.8
Family income								
Lower income	11,185	1,600	98.7	9,784	5,558	86.1	4,848	49.6
Middle-income	11,114	6,913	82.6	5,710	7,632	60.1	3,558	30.4
Higher income	11,346	19,395	20.8	2,975	9,416	10.9	2,220	16.6
				Highest level				
Total	21,947	11,370	85.2	15,025	12,935	65.4	7,790	41.4
Family income								
Lower income	21,865	2,279	98.2	20,259	9,081	86.4	8,518	58.6
Middle income	21,620	7,024	98.7	14,934	11,427	73.7	7,449	47.4
Higher income	22,293	21,663	64.1	9,415	17,007	43.2	7,257	24.0

[1]Expected Family Contribution (EFC) may exceed actual student budget; therefore, the average EFC reported in this table cannot be used to calculate financial need and unmet need reported in this table.
[2]Includes zero values.
[3]Student budget minus EFC.
[4]Student budget minus all aid.
[5]Student budget minus EFC minus aid.

NOTE: Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents. All averages reported in this table include zero values.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

FINANCIAL NEED AND PRICE OF ATTENDANCE

Because EFC takes into account family size and the number of other college students in the family, as well as family income and assets, 42 percent of FTFY dependent undergraduates from middle income families had financial need even though they were attending in the lowest price-of-attendance level (table 10). At the moderate price-of-attendance level, 60 percent of middle income FTFY dependent undergraduates had financial need, as did 83 percent of those in the upper price-of-attendance level, and almost all (99 percent) of those in the highest price-of-attendance category. The average net price[17] after financial aid for middle income FTFY

[17]Net Price is price of attendance minus financial aid (including loans, which do not need to be repaid from current-year funds).

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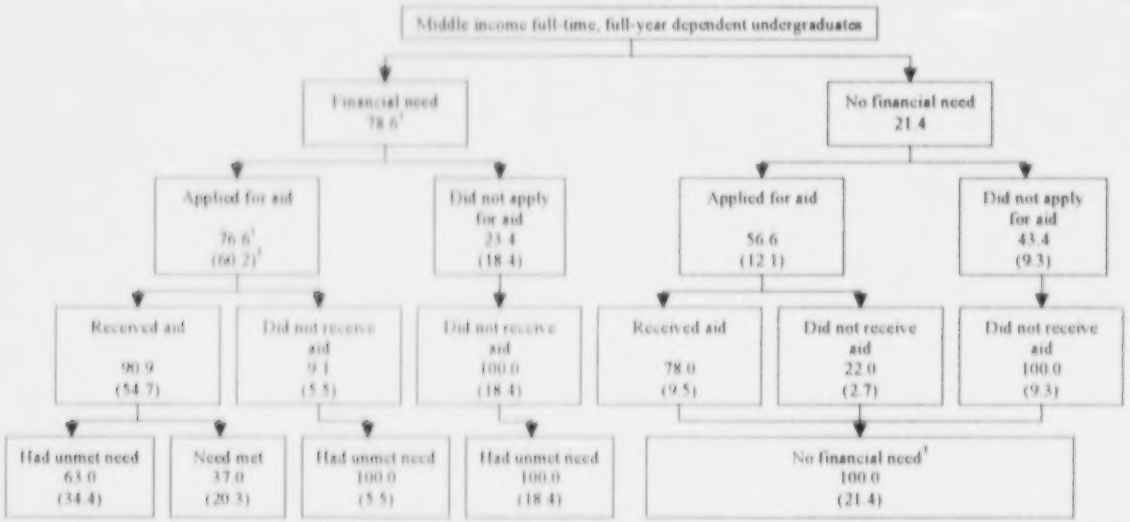
Figure 4.—Percentage distribution of full-time, full-year dependent undergraduates from middle income families by financial need status, aid application status, receipt of aid, and unmet need status: 1995-96



[1]The first number in the box represents the percentage in the reported group of the specified variable, so that the subgroup sums to 100 percent of the full-time, full-year dependent undergraduates in the preceding subgroup (e.g., 78.6 percent of those with financial need applied for aid, and 21.4 percent did not apply for aid, thus accounting for all those with financial need).
[2]The second number in the box, in the parentheses, represents the percentage in the reported group across all variables in the row, or the percentage of full-time, full-year dependent undergraduates who fall in this cell, so that the row sums to 100 percent (e.g., of all full-time full-year dependent undergraduates from middle income families, 60.2 percent had financial need and applied for aid, 18.4 percent of those did not apply for aid, of those with no financial need, 12.1 percent applied for aid, while 9.3 percent did not, thus accounting for all full-time, full-year dependent undergraduates from middle income families).
[3]These undergraduates are those with no financial need. Financial need is the difference between expected family contribution and price of attendance. Unmet need occurs when there is financial need and financial aid does not cover all of the financial need. Thus, if a student does not have financial need, he or she cannot have unmet need.

NOTE: Percentages may not sum to 100 due to rounding. Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

dependent undergraduates ranged from $4,581 for those enrolled at the lowest price-of-attendance level to $11,427 for those enrolled at the highest price-of-attendance level. The average EFC for middle income FTFY dependent undergraduates ranged narrowly between $6,569 and $7,024, with an overall average of $6,865, because EFC is not dependent on the price of attendance.[18]

[18]The reader is reminded that EFC is based on dependency, family size, income, assets and number in college.

Unmet Need

Financial aid, coupled with EFC, does not always cover the price of attendance. Fifty-eight percent of all middle income FTFY dependent undergraduates had unmet financial need after EFC and the award of all aid, compared with 21 percent of those in the higher income group (table 10). Lower income FTFY dependent undergraduates, however, had the largest percent with unmet need (87 percent).

The percentage of middle income FTFY dependent undergraduates with unmet need at each price-of-attendance level (37, 44, 60 and 74 percent) was smaller than for those in the lower income group (86, 89, 86, and 86 percent), but higher than for those in the higher income group (9, 4, 11, and 43 percent). The average unmet need of middle income FTFY dependent undergraduates with financial need was $4,375, ranging from $1,605 in the lowest price-of-attendance level to $7,449 in the highest price-of-attendance level.

Students managed to attend college full-time even though there was an apparent gap between their price of attendance and the amount of support they received from financial aid and EFC. Perhaps the federal financial aid formula did not accurately measure their families' real ability to pay for college or the student may have spent less than the average allowance for living expenses. These possibilities are considered in the next section.

Applying For Financial Aid

Almost one-quarter (23 percent) of middle income FTFY dependent undergraduates with financial need did not apply for financial aid (figure 4), constituting 32 percent of the middle income group with unmet need (table 11). The other 69 percent of FTFY dependent undergraduates with unmet financial need did apply for aid, but received less than the amount needed using the federal financial aid formulas.

Why did these aid-eligible students not apply for financial aid? Forty-eight percent of middle income FTFY dependent undergraduates with unmet need who did not apply for aid said either they or their families could pay, 32 percent said they did not apply because they thought their family incomes were too high, and 9 percent did not apply for aid because they did not want

to incur debt (table 11).[19] A larger share of middle income FTFY dependent undergraduates indicated that they did not want debt than those from the higher income group (9 percent compared with 1 percent).

Choy (2000), in her study of low-income students, found that 11 percent of that group did not apply for financial aid. She suggested that in addition to these reasons for not applying, others might include erroneous beliefs of ineligibility, a change in financial circumstances between the end of 1994 (the year used for determining the family income) and when they enrolled in 1995–96, or family assets not included in EFC assessment that made financial aid unnecessary.

The foregoing analysis has shown that 58 percent of middle income families or the students themselves contribute more than their EFC to attend the colleges in which they have chosen to enroll. One-third of middle income FTFY dependent undergraduates with unmet need had not applied for financial aid. Reasons given included a belief that family income was too high (32 percent), or that the family could afford to pay (48 percent). But for those who did apply for aid, and did not have their financial need met, it could mean that they and their families were making greater financial effort to attend their institution of choice.

Student Housing Status

The needs analysis system credits students who live at home with a minimum expense even though no money changes hands. Living at home is a way that a student with limited resources can save money. Prior to 1998 the law specified a minimum allowance for students living with parents. (Effective October 1, 1998, these minimum limits were removed.)

[19]The U.S. Department of Education estimated EFC for non-applicants using regression methods as part of the NPSAS study. For details regarding the methodology, refer to Appendix I of: Riccobono, J. A., Whitmore, R. W., Gable, T. J., Traccarella, M. A., Pratt, D. J., Berkner, L. K. *National Postsecondary Student Aid Study, 1995-96 (NPSAS:96), Methodology Report*, NCES 98-073. (Washington, DC: U.S. Department of Education, National Center for Education Statistics, 1997).

Table 11.—Percentage of full-time, full-year dependent undergraduates with unmet need who did not apply for financial aid and reasons for not applying for financial aid, by family income: 1995-96

		Reasons for not applying		
	Percent did not apply for aid	Did not want debt	Family income too high	Family or student could pay
Total	24.2	5.2	34.8	44.6
Family income				
Lower income	14.7	1.9	35.0	37.5
Middle income	31.5	9.2	31.6	47.6
Higher income	45.4	0.9	42.2	49.3

NOTE: Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

Middle income FTFY dependent undergraduates were more likely than those in the higher income group to live with parents or relatives (35 percent compared with 26 percent), but about the same as those in the lower income group (table 12). At each price-of-attendance level, the percentages living off campus or with parents or relatives were about the same for each of the three income groups. Eighty-one percent of middle income FTFY dependent undergraduates attending at the lowest-price-of-attendance level lived with parents or relatives, compared with 60 percent at the moderate price-of-attendance level, 27 percent at the upper price-of-attendance level, and 14 percent at the highest price-of-attendance level. It appears housing status was not used by FTFY dependent undergraduates in different income groups to reduce their college expenses within price-of-attendance level, although each income group was less likely to live with parents as price-of-attendance level increased.

Table 12.—Percentage distribution of full-time, full-year dependent undergraduates according to student housing status, by price-of-attendance level and family income: 1995-96

	On campus	Off campus	With parents or relatives
		All	
Total	36.5	29.7	33.7
Family income			
Lower income	33.3	27.8	38.8
Middle income	36.5	29.0	34.5
Higher income	40.5	33.1	26.4

Table 12.—Percentage distribution of full-time, full-year dependent undergraduates according to student housing status, by price-of-attendance level and family income: 1995-96—Continued

	On campus	Off campus	With parents or relatives
		Lowest level	
Total	9.2	9.6	81.3
Family income			
Lower income	9.4	8.4	82.2
Middle income	9.7	10.4	80.0
Higher income	7.2	11.8	81.1
		Moderate level	
Total	18.7	21.6	59.6
Family income			
Lower income	17.6	21.0	61.5
Middle income	19.5	20.5	60.0
Higher income	19.6	25.1	55.3
		Upper level	
Total	35.4	39.2	25.5
Family income			
Lower income	35.2	38.2	26.6
Middle income	35.5	38.1	26.5
Higher income	35.4	41.7	22.9
		Highest level	
Total	61.2	24.6	14.2
Family income			
Lower income	60.9	23.4	15.7
Middle income	62.8	23.1	14.1
Higher income	60.1	26.7	13.3

--Sample size too small for reliable estimate

NOTE: Percentages may not sum to 100 due to rounding. Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

NET PRICE

Another approach to assessing how students meet their college expenses is to look at net price, which is defined as price of attendance minus financial aid. Net price represents the amount of money that students and their families have to come up with during a given year in order for the student to enroll, or out-of-pocket contributions.

Analysis of out-of-pocket contributions does not depend on the assumption that families can afford to pay the EFC, that EFC is set at the appropriate level, or that parents actually contribute their EFC even if they can afford to do so. Two components of out-of-pocket expenses are examined – students' earnings while they were enrolled and parents' contributions.

Earnings and parents' contributions data were reported through telephone interviews that asked students to recollect earnings and family financial contributions. Therefore, they only approximate amounts earned or contributed because respondents may either have recollected inaccurately, or may not have accurately known their families' contributions. Thus, while the results may provide an incomplete picture of how students and their families actually met out-of-pocket expenses, they do help to identify the extent to which financial aid programs help middle income students meet the expenses of college, and whether self-help (student earnings) and family help vary by family-income level and price of attendance.

Net Price And Price Of Attendance

Table 13a shows how price of attendance for middle income FTFY dependent undergraduates is broken down into that amount covered by aid, and the amount remaining as net price. Table 13b shows the components of aid received by middle income FTFY dependent undergraduates, and the amount of net price covered by student earnings, assuming that all student earnings were committed to the price of attending college. The remaining amount of net price comes from "unknown" contributions that may include parents, but may also come from other sources. NPSAS:96 contains data on the percent of parents contributing to students' price of attendance, but it does not contain the total amount contributed by parents or others. The "unknown" amount of contribution to net price will be higher when students do not contribute all of their earnings to costs of attending college (which they are not required to do).

Table 13a.—Average amounts for selected components of price and total aid for full-time, full-year dependent undergraduates from middle income families, by price-of-attendance level: 1995-96

	Price of attendance	Total aid	Net price*	Expected family contribution (EFC) at any postsecondary institution
Total	$12,284	$4,418	$7,867	$6,865
Price-of-attendance level				
Lowest	5,292	711	4,581	6,569
Moderate	7,255	1,587	5,668	6,682
Upper	11,114	3,482	7,632	6,913
Highest	21,620	10,193	11,427	7,024

*Student budget minus all aid

NOTE: Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents. All averages reported in this table include zero values.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

Table 13b.—Average amounts for selected components of sources of funds for full-time, full-year dependent undergraduates from middle income families, by price-of-attendance level: 1995-96

	Aid				Net price	
	Loan	Grant	Work-study	Other	Earnings	Unknown
Total	$2,229	$1,873	$175	$141	$3,380	$4,487
Price-of-attendance level						
Lowest	306	388	4	14	4,478	103
Moderate	975	523	36	53	3,737	1,931
Upper	2,219	1,060	111	92	3,419	4,213
Highest	4,009	5,323	495	365	2,508	8,919

NOTE: Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents. All averages reported in this table include zero values.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

Because most financial aid is awarded on the basis of financial need, families with higher incomes have a higher net price after financial aid (see table 10). But, net price also increases at each price-of-attendance level (table 13a). Middle income families, for example, were left with an average out-of-pocket expense (i.e., net price) of $4,581 for FTFY dependent undergraduates attending at the lowest price-of-attendance level, $5,668 for those attending at the moderate

price-of-attendance level, $7,632 for those attending at the upper price-of-attendance level, and $11,427 for those attending at the highest price-of-attendance level.

At the lowest price-of-attendance level, 46 percent of middle income FTFY dependent undergraduates faced a net price of between $2,500 and $4,999, while 48 percent faced a net price of between $5,000 and $7,499 (table 14). At the moderate price-of-attendance level, 54 percent of the middle income FTFY dependent undergraduates had a net cost between $5,000 and $7,499. For middle income FTFY dependent undergraduates attending at the upper price-of-attendance level, 56 percent faced a net price of $7,500 or more, while at the highest price-of-attendance level, one-half faced a net price of $10,000 or more. Even if EFC is only an imprecise measure of a family's ability to contribute toward the price of college, most middle income FTFY dependent undergraduates attending at the highest price-of-attendance level faced a net price considerably in excess of the $7,024 average EFC.

Table 14.—Percentage distribution of full-time, full-year dependent undergraduates according to net price, by price-of-attendance level and family income: 1995-96

	Less than $1,000	$1,000-2,499	$2,500-4,999	$5,000-7,499	$7,500-9,999	$10,000 or more
			All			
Total	6.9	7.6	17.4	22.1	18.2	27.8
Family income						
Lower income	12.3	14.6	27.0	20.7	12.3	13.1
Middle income	5.0	5.3	16.9	27.3	21.1	24.3
Higher income	2.8	2.2	6.3	17.0	21.5	50.2
			Lowest level			
Total	5.3	16.7	42.7	35.3	0.0	0.0
Family income						
Lower income	10.3	29.6	46.4	13.7	0.0	0.0
Middle income	0.5	4.7	46.4	48.4	0.0	0.0
Higher income	0.0	2.3	20.4	77.4	0.0	0.0
			Moderate level			
Total	6.5	10.3	23.7	44.1	15.4	0.0
Family income						
Lower income	11.9	16.8	35.1	28.9	7.4	0.0
Middle income	3.6	7.2	18.9	54.4	16.0	0.0
Higher income	1.1	3.0	9.6	55.5	30.8	0.0

Table 14.—Percentage distribution of full-time, full-year dependent undergraduates according to net price, by price-of-attendance level and family income: 1995-96—Continued

	Less than $1,000	$1,000-2,499	$2,500-4,999	$5,000-7,499	$7,500-9,999	$10,000 or more
			Upper level			
Total	7.5	6.2	15.0	16.7	26.6	28.0
Family income						
Lower income	13.8	11.6	22.6	20.1	18.5	13.4
Middle income	5.2	5.0	14.6	19.0	29.9	26.4
Higher income	3.4	1.7	6.6	9.8	31.4	47.1
			Highest level			
Total	6.6	5.4	9.2	11.0	10.2	57.7
Family income						
Lower income	10.5	10.4	16.7	16.2	11.1	35.2
Middle income	7.4	4.5	10.3	14.1	13.9	49.8
Higher income	3.0	2.6	2.9	4.6	6.3	80.6

NOTE: Percentages may not sum to 100 due to rounding. Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

Paying the Net Price of Attendance

Student Earnings

Students who work are expected to make some contribution to paying for college. In 1999-2000, EFC included 50 percent of students' adjusted income after deduction of tax allowances and income protection allowances of $2,200 per year. The actual amount from earnings that students commit to paying for college is not known.

How do middle income FTFY dependent undergraduates' earnings relate to net price at each price-of-attendance level? Average earnings[20] for all middle income FTFY dependent undergraduates were about the same at the lowest, moderate and upper price-of-attendance levels (table 13b). For the small percentage of middle income FTFY dependent undergraduates attending at the lowest price-of-attendance level (8 percent, see figure 3), average earnings were

[20]The averages in tables 13a and 13b include zero values.

$4,478, and net price was $4,581 (table 13a).[21] For those attending at the moderate price-of-attendance level, average earnings were $3,737 and net price was $5,668. For those attending at the upper price-of-attendance level, average earnings were $3,419 and net price was $7,632. Middle income FTFY dependent undergraduates attending at the highest price-of-attendance level had lower average earnings than for those enrolled at the other three price-of-attendance levels ($2,508), and this amount was only about 20 percent of their net price of $11,427.

Percent Working, Average Hours Worked, and Earnings of Those Who Worked

The percentages of middle income FTFY dependent undergraduates who worked at the moderate, upper and highest price-of-attendance levels were about the same (about three-quarters) (table 15).[22] Middle income FTFY dependent undergraduates who worked while enrolled at the highest price-of-attendance level worked fewer average hours (16.5) than did those who were enrolled at the lowest, moderate and upper price-of-attendance levels (25.0, 23.0 and 21.1 hours respectively).[23] The average dollars earned by those who worked[24] was lower for middle income FTFY dependent undergraduates enrolled at the highest price-of-attendance level ($3,520) compared with those enrolled at the lowest, moderate and upper levels ($5,478, $4,788 and $4,923 respectively). In short, middle income FTFY dependent undergraduates enrolled at the highest price-of-attendance level worked fewer hours, and earned less than those in the middle income group who were enrolled at other price-of-attendance levels.

Overall, the percent of middle income FTFY dependent undergraduates who worked while enrolled (78 percent) was about the same as those working while enrolled in the lower income group. Fewer higher income FTFY dependent undergraduates than those in the middle income group worked while enrolled.

The percentages working while attending at the lowest price-of-attendance level were about the same for each income group (81 percent). At the moderate price-of-attendance level,

[21]The reader is reminded that students are not expected to contribute all of their earnings toward their EFC or price of attendance. The actual amount contributed from earnings is not known and some may contribute more or less than calculated for their EFC.

[22]A larger percentage of middle income FTFY dependent undergraduates worked while enrolled at the lowest price-of-attendance level (86 percent) than did those who were enrolled at the upper and highest price-of-attendance levels (74 and 76 percent respectively).

[23]The difference between hours worked for those enrolled at the lowest and upper price-of-attendance level was statistically significant (25 percent compared with 21 percent).

[24]The averages on table 15 do not include zero values.

82 percent of middle income FTFY dependent undergraduates worked, compared with 70 percent of those in the lower income group, but about the same as those in the higher income group. Seventy-six percent of middle income and lower income FTFY dependent undergraduates attending at the highest price-of-attendance level worked, compared with 60 percent of those in the higher income group.

Average hours worked for those who worked, and average earnings for those who worked, are about the same for each income group within price-of-attendance level.

In summary, middle income FTFY dependent undergraduates' earnings were similar to net price at the lowest price-of-attendance level but only about 20 percent of the net price for those attending at the highest price-of-attendance level. Those enrolled at the highest price-of-attendance level worked fewer hours and earned less than middle income students enrolled at other price-of-attendance levels, even though they faced the highest net price of attendance. Fewer higher income FTFY dependent undergraduates than those in the middle income group worked while enrolled at the highest price-of-attendance level. Fewer lower income FTFY dependent undergraduates than those in the middle income group worked while enrolled at the moderate price-of-attendance level. Within price-of-attendance level, average hours worked and average earnings for those who worked were about the same for each income group.

Table 15.—Percentage of full-time, full-year dependent undergraduates who worked, average amount of hours worked and average earnings while enrolled, by price-of-attendance level and family income: 1995-96

	Percent working while enrolled	Average hours worked per week while enrolled	Average earnings while enrolled
		All	
Total	73.9	20.9	4,424
Family income			
Lower income	74.5	21.0	4,248
Middle income	77.5	20.9	4,644
Higher income	68.1	20.4	4,305

Table 15.—Percentage of full-time, full-year dependent undergraduates who worked, average amount of hours worked and average earnings while enrolled, by price-of-attendance level and family income: 1995-96—Continued

	Percent working while enrolled	Average hours worked per week while enrolled	Average earnings while enrolled
		Lowest level	
Total	81.4	24.1	4,708
Family income			
Lower income	75.3	22.3	4,220
Middle income	86.3	25.0	5,478
Higher income	89.9	--	--
		Moderate level	
Total	76.1	23.5	5,167
Family income			
Lower income	69.6	23.3	5,005
Middle income	81.6	23.0	4,788
Higher income	78.6	25.1	6,296
		Upper level	
Total	73.0	20.7	4,481
Family income			
Lower income	75.6	20.9	4,261
Middle income	74.4	21.1	4,923
Higher income	68.2	19.9	4,077
		Highest level	
Total	70.7	17.0	3,469
Family income			
Lower income	78.2	17.6	3,325
Middle income	76.2	16.5	3,520
Higher income	60.4	17.2	3,535

--Sample size too small for reliable estimate.

NOTE: Percentages may not sum to 100 due to rounding. Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

Parents' Contributions

The total amount of parental financial contribution to students' price of attendance is not available in NPSAS:96. Information on the types of contributions made by parents were collected through telephone interviews to students. It is not possible, therefore, to directly compare parents' contributions to the gap between students' earnings and their net price of attendance. Nor is it possible to know what contributions may have come from other private sources. In this section, therefore, information on the percentage of parents contributing is analyzed, and the "unknown" source of support shown in table 13b is compared to EFC to gain insight into parents' contributions to students' price of attendance.

Ninety-one percent of middle income FTFY dependent undergraduates' parents made some contribution to their price of attendance in 1995–96, a percentage that was larger than for those in the lower income group (79 percent), but smaller than the 98 percent contributing for those in the higher income group (table 16).[25] Since the federal methodology calls for parental financial contribution from almost all middle income families,[26] this finding may suggest either that some parents are unable to meet the expectations of EFC, or that they choose not to meet financial expectations, or that students do not ask parents for help.

Seventy-four percent of middle income FTFY dependent undergraduates reported that their parents contributed directly (e.g., payment made to the institution for housing, meals, or books) to their price of attendance, more than the percentage reported by the lower income group (53 percent), and less than the percentage reported by the higher income group (89 percent). Other sources of support for middle income FTFY dependent undergraduates include parental allowances and other parental financial support. Thirty percent of middle income FTFY dependent undergraduates reported receiving allowances averaging $1,815; 26 percent reported receiving other parental financial support of less than $1,000 and 44 percent received $1,000 or more in 1995–96.

The percentage of parents reported to provide any contribution to middle income FTFY dependent undergraduates' price of attendance was higher at the highest-price-of-attendance lev-

[25]A student was considered to have any parental contribution if he or she received any one or more of the following: direct payments to the institution for tuition, housing, meals, or books; allowance; support from parents other than direct payments for tuition, housing, meals, or books.

[26]Ninety-nine percent of middle income FTFY dependent undergraduates had an EFC greater than $0, compared with 70 percent of those in the lower income group. NPSAS:96. Not shown in table.

els (96 percent) than at the moderate and upper levels (89 and 91 percent respectively).[27] More higher income FTFY dependent undergraduates received parental assistance at the upper and highest price-of-attendance levels than did those in the middle income group (98 percent and 99 percent compared with 91 percent and 96 percent). More middle income FTFY dependent undergraduates, in turn, received parental support at the moderate, upper and highest price-of-attendance levels than did those in the lower income group (89 percent, 91 percent and 96 percent compared with 79 percent, 77 percent and 88 percent).

Even though students' earnings[28] were similar to net price for middle income FTFY dependent undergraduates attending at the lowest price-of-attendance level (table 13b), 84 percent reported some parental support. Eighty-nine percent of middle income FTFY dependent undergraduates enrolled at the moderate price-of-attendance level reported receiving contributions to expenses from their parents, and these students could probably meet the "unknown" contributions of $1,931 through modest amounts of parental contributions (table 13b). Perhaps these students attended at the lowest and moderate price-of-attendance levels in order to reduce but not eliminate the amount of EFC that their parents needed to contribute, or to increase their available discretionary income, or both.

For the 49 percent of middle income FTFY dependent undergraduates enrolled at the upper price-of-attendance level (figure 3), their net price was $7,632 (table 13a), and students' average earnings were $3,419 (table 13b). Ninety-one percent reported some parental contribution (table 16). With an "unknown" gap of $4,213 (table 13b), and an average total EFC of $6,913 (table 13a) that includes a portion of students' earnings, it appears that FTFY dependent undergraduates attending at the upper price-of-attendance level can, on average, meet the net price of attendance through student earnings and a parental component of EFC.

For the 23 percent of middle income FTFY dependent undergraduates enrolled at the highest price-of-attendance level (figure 3), the gap between the net price of $11,427 (table 13a) and student earnings of $2,508 (table 13b) was substantial ($8,919). Average earnings for these middle income FTFY dependent undergraduates were lower than at other price-of-attendance levels, while the percentage of parents contributing (96 percent, table 16) was higher. Again, the

[27]The difference between the percentages of parents contributing to the price of attendance for FTFY dependent undergraduates from middle income families at the lowest price-of-attendance level and the other price-of-attendance levels was not statistically significant because of large standard errors.

[28]The reader is reminded that the student is not expected to contribute all of their earnings to price of attendance. The actual amount contributed from earnings is not known, some may contribute more, and some may contribute less.

actual amounts contributed by parents are not known, but these data suggest that they may be contributing in amounts that exceed by several thousand dollars the parents' share of $7,024 EFC (table 13a).

Table 16.—Among full-time, full-year dependent undergraduates, average net price, percentage who received contributions or allowance from parents, and percentage distribution according to amount of other type of support received from parents, by price-of-attendance level and family income: 1995-96

	Net price for attendance[1]	Percent of parents who provided any contribution	Percent of parents who helped with direct contribution[2]	Average allowance per month		Percent with other type of support from parents		
				Percent received allowance	Amount (if received)	None	Less than $1,000	$1,000 or more
				All				
Total	$8,113	89.1	71.2	30.7	$1,934	32.1	25.3	42.6
Family income								
Lower income	5,628	79.4	52.6	24.2	1,520	41.7	25.5	32.8
Middle income	7,867	91.1	74.4	29.5	1,815	30.4	25.8	43.9
Higher income	11,462	97.5	89.1	40.5	2,361	22.4	24.5	53.1
				Lowest level				
Total	3,874	82.5	54.0	23.2	1,237	34.2	22.5	43.3
Family income								
Lower income	2,972	75.3	41.5	19.2	1,434	36.8	26.0	37.3
Middle income	4,581	83.9	55.9	25.7	--	35.6	17.2	47.2
Higher income	5,227	98.5	86.1	29.0	--	--	--	--
				Moderate level				
Total	5,200	85.8	62.8	26.0	1,744	33.9	26.2	39.8
Family income								
Lower income	4,080	79.0	48.9	22.1	1,329	42.9	29.4	27.7
Middle income	5,668	88.5	68.0	26.4	1,625	30.4	21.8	47.8
Higher income	6,603	93.2	79.0	33.0	2,496	23.4	29.1	47.5
				Upper level				
Total	7,460	88.7	70.1	33.7	2,105	32.0	25.1	42.8
Family income								
Lower income	5,558	77.4	49.6	26.1	1,636	43.8	22.8	33.4
Middle income	7,632	91.1	74.1	31.8	2,004	29.2	28.8	42.0
Higher income	9,416	97.7	88.2	45.2	2,520	21.6	22.8	55.6

Table 16.—Among full-time, full-year dependent undergraduates, average net price, percentage who received contributions or allowance from parents, and percentage distribution according to amount of other type of support received from parents, by price-of-attendance level and family income: 1995-96—Continued

	Net price for attendance[1]	Percent of parents who provided any contribution	Percent of parents who helped with direct contribution[2]	Average allowance per month		Percent with other type of support from parents		
				Percent received allowance	Amount (if received)	None	Less than $1,000	$1,000 or more
				Highest level				
Total	12,935	95.0	87.0	32.2	1,923	29.8	25.9	44.3
Family income								
Lower income	9,081	87.5	71.6	26.0	1,500	38.1	26.9	35.0
Middle income	11,427	96.3	89.5	29.3	1,800	30.9	26.1	43.0
Higher income	17,007	98.8	95.3	39.1	2,202	22.7	25.0	52.3

[1]Student budget minus all aid. Net price is the amount of money that students and their families have to come up with during a given year in order for the student to enroll; this includes zero values.
[2]Parents could report making direct contributions to the institutions to pay for tuition, housing, meals, or books.

NOTE: Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents.

--Sample size too small for reliable estimate.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

Family Income and Net Price at the Highest Price-of-Attendance Level

It was shown earlier that middle income FTFY dependent undergraduates were less likely to be enrolled at the highest price-of-attendance level than those in the higher income group. Table 17a shows total aid and net price of attendance, while table 17b shows the sources of financial aid, student earnings and the "unknown" contribution for FTFY dependent undergraduates from each family income group who were attending at the highest price-of-attendance level. The $8,919 gap for middle income FTFY dependent undergraduates attending at the highest price-of-attendance level (table 17b) exceeds their EFC of $7,024 (which includes a portion of student earnings) by several thousand dollars. Table 17b also shows the gap between student earnings and net price for lower income and higher income FTFY dependent undergraduates attending at the highest price-of-attendance level in 1995–96. With an "unknown" contribution of $6,650 for FTFY dependent undergraduates attending from lower income families, students and their families in this income group must come up with much more than their $2,279 EFC (table 17a) to cover attendance at the highest price-of-attendance level. The "unknown" contribution of $15,102, after student earnings, for higher income FTFY dependent undergraduates (table 17b) is within their average EFC of $21,663 (table 17a).

These results suggest that, even with financial aid, students and their families from the middle income group, as well as those from the lower income group, must access financial resources beyond EFC to cover out-of-pocket expenses for dependent undergraduates enrolled at the highest price-of-attendance level.

Table 17a.—Average amounts for selected components of price and total aid for full-time, full-year dependent undergraduates enrolled at the highest price-of-attendance level, by family income: 1995-96

	Price of attendance	Total aid	Net price*	Expected family contribution (EFC) at any postsecondary institution
Total	$21,947	$9,013	$12,935	$11,370
Family income				
Lower income	21,865	12,785	9,081	2,279
Middle income	21,620	10,193	11,427	7,024
Higher income	22,293	5,286	17,007	21,663

*Student budget minus all aid.

NOTE: Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents. All averages reported in this table include zero values.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

Table 17b.—Average amounts for selected components of sources of funds for full-time, full-year dependent undergraduates enrolled at the highest price-of-attendance level, by family income: 1995-96

	Aid				Net price	
	Loan	Grant	Work-study	Other	Earnings	Unknown
Total	$3,412	$4,883	$407	$310	$2,251	$10,684
Family income						
Lower income	3,917	7,962	597	309	2,431	6,650
Middle income	4,009	5,323	495	365	2,508	8,919
Higher income	2,530	2,299	193	263	1,905	15,102

NOTE: Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents. All averages reported in this table include zero values.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

TYPES AND SOURCES OF FINANCIAL AID

It was shown earlier that almost four out of every five (79 percent) middle income full-time, full-year (FTFY) dependent undergraduates were determined to have had financial need in 1995–96 (figure 4), and that most (91 percent) of those with need who applied for financial aid received some help. Figure 4 also showed that more than one-half (57 percent) of middle income FTFY dependent undergraduates with no financial need applied for aid, and that 78 percent of that group received aid. Overall, 64 percent of middle income FTFY dependent undergraduates received some financial aid in 1995–96 (table 18). What were the types and sources of this financial aid? Did the sources and types of aid differ for those with financial need compared with those with no financial need? Did aid differ depending on the price-of-attendance level? Were the types and sources of aid different for the three income groups of FTFY dependent undergraduates? And, was borrowing behavior related to net price?

Fifty-two percent of middle income FTFY dependent undergraduates with need received grants in 1995–96 and 50 percent received loans (figure 5, table 18). Financial aid covered 35 percent of the price of attendance for middle income FTFY dependent undergraduates with financial need. Loans constituted 42 percent of total aid for middle income FTFY dependent undergraduates with need, while grants constituted 44 percent. Work-study and other types of aid provided the remaining aid.

The percentage of middle income FTFY dependent undergraduates with need who received grants (52 percent) was smaller than among the lower income group (77 percent), but more than among higher income FTFY dependent undergraduates with need (44 percent). The percentages of FTFY dependent undergraduates with need who received loans were not significantly different among the three income groups.

Forty-four percent of middle income FTFY dependent undergraduates with no financial need actually received some financial aid, with 24 percent receiving grants and 24 percent receiving loans. A smaller percentage of higher income FTFY dependent undergraduates with no financial need received aid (34 percent) although the percentage with grants or loans was about the same as the middle income group. Because of the small size of the lower income group with no financial need, there was no significant difference between the percentage of middle income FTFY dependent undergraduates and the lower income group receiving any aid, loans, or grants.

Table 18.—Percentage distribution of full-time, full-year dependent undergraduates according to aid receipt status, type of aid received, and ratio of aid to total aid by type of aid, and price of attendance, by financial need status and family income: 1995-96

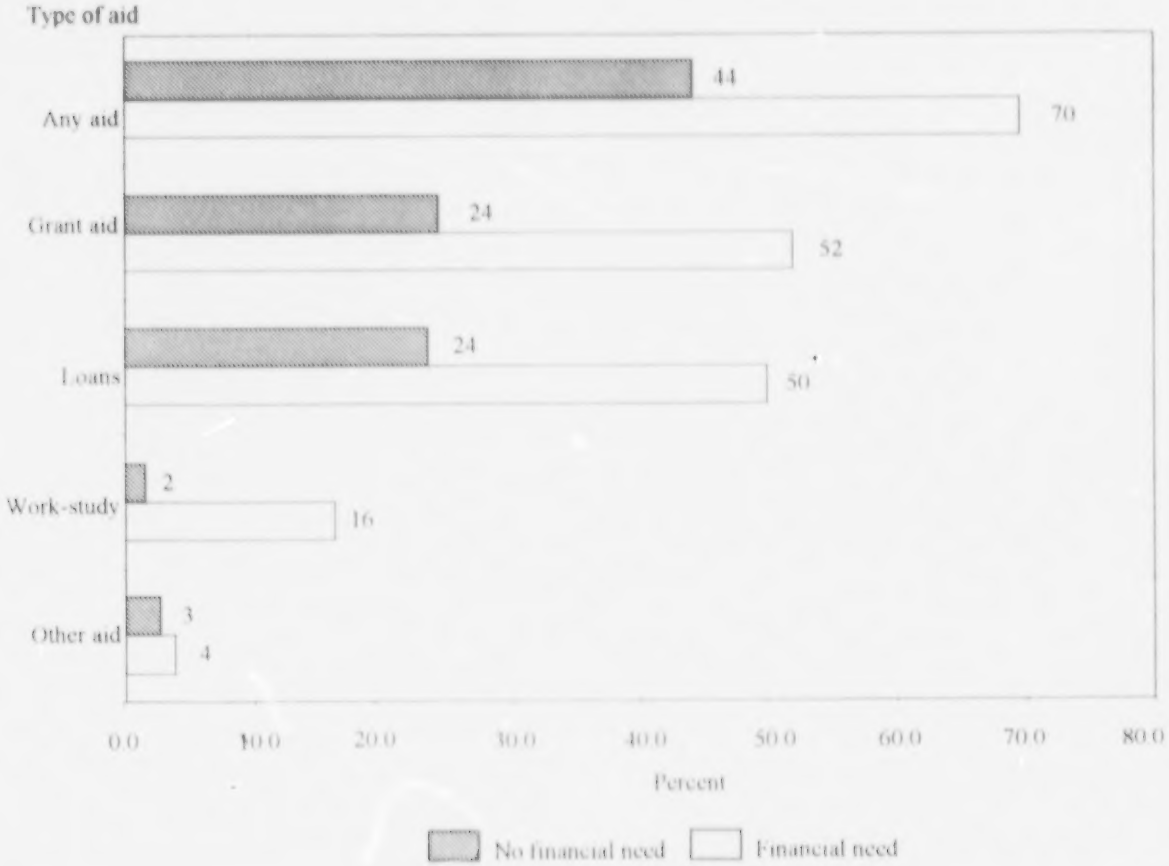
	Aid receipt status		Type of aid							
	Received aid	Did not receive aid	Loans	Ratio of loans to total aid*	Grants	Ratio of grant aid to total aid*	Work-study	Ratio of work-study to total aid*	Other aid type	Ratio of total aid to price of attendance*
All										
Total	64.5	35.5	41.0	36.1	51.2	52.2	12.7	3.5	3.8	33.5
Family income										
Lower income	82.0	18.0	49.7	30.3	76.1	62.2	17.6	3.1	5.0	49.0
Middle income	64.2	35.8	44.3	42.8	46.1	44.2	13.0	3.6	3.6	31.2
Higher income	43.6	56.4	26.0	36.8	27.5	45.0	6.3	4.2	2.7	17.8
Financial need										
Total	75.0	25.0	49.4	35.5	62.7	53.4	16.7	3.6	4.4	41.1
Family income										
Lower income	82.6	17.4	50.0	30.0	77.0	62.5	17.8	3.1	5.0	49.5
Middle income	69.6	30.4	50.0	42.2	52.0	44.0	16.2	4.0	3.8	35.4
Higher income	64.0	36.0	45.3	38.3	44.2	43.0	14.1	4.3	3.8	28.9
No financial need										
Total	36.9	63.1	18.8	39.5	20.7	45.7	2.2	3.1	2.4	13.4
Family income										
Lower income	45.3	54.7	33.0	59.2	17.1	23.4	2.4	0.7	4.0	19.1
Middle income	44.2	55.8	23.6	45.9	24.4	45.2	1.5	1.4	2.7	15.8
Higher income	33.6	66.4	16.4	35.3	19.3	46.8	2.4	4.1	2.2	12.3

*Ratios include zero values.

NOTE: Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

Figure 5.—Percentage of full-time, full-year dependent undergraduates from middle income families receiving aid according to financial aid status, by type of aid: 1995-96



NOTE: Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents. Financial need is the difference between expected family contribution and price of attendance.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

The next sections provide information about the types of grants received and examine different patterns of grant aid at different price-of-attendance levels.

GRANTS

Forty-six percent of middle income FTFY dependent undergraduates in 1995–96 received grants (table 18), with an average award of $4,065 (table 20). Table 19 shows the percentage of FTFY dependent undergraduates receiving federal, state, institutional, or other grant aid, by financial need status and income group. For those with financial need, approximately one-third (35 percent) received institutional grants, with no differences among the three income groups. For middle income FTFY dependent undergraduates with financial need, as well as those in the higher income group, institutional aid was the most common source of grant aid (36 percent and 37 percent respectively). Twenty percent of middle income FTFY dependent undergraduates with financial need received state grants. While approximately one-third (35 percent) of lower income FTFY dependent undergraduates with need also received institutional grants, the percentage receiving federal grant aid was 61 percent. Institutional grants averaged $4,483 for those with financial need who received them, with no differences among income groups (table 20).

Among FTFY dependent undergraduates with no financial need, thirteen percent received institutional grants, and there were no statistically significant differences among the three income groups in the percent receiving these grants (table 19).[29] Institutional grants to higher income FTFY dependent undergraduates with no financial need were larger than grants to those in the middle income group ($2,877 compared with $1,479) (table 20).

Table 19.—Percentage of full-time, full-year dependent undergraduates receiving grant aid according to source of grant, by financial need status and family income: 1995-96

	Total grant aid	Federal grant aid	State grant aid	Institutional grant aid	Other grant aid
			All		
Total	51.2	23.2	18.6	29.1	10.8
Family income					
Lower income	76.1	59.7	31.5	34.1	11.7
Middle income	46.1	6.6	16.9	31.1	12.0
Higher income	27.5	0.4	6.2	20.4	8.3

[29]The reader is reminded that only two percent of lower income FTFY dependent undergraduates had no financial need. For those in the middle and higher income groups, the percentages are 21 and 67, respectively. The small percentage of lower income FTFY dependent undergraduates with no financial need is associated with a relatively large standard error; therefore, achieving statistically significant differences for this group is unlikely.

Table 19.—Percentage of full-time, full-year dependent undergraduates receiving grant aid according to source of grant, by financial need status and family income: 1995-96—Continued

	Total grant aid	Federal grant aid	State grant aid	Institutional grant aid	Other grant aid
			Financial need		
Total	62.7	31.8	24.0	35.3	12.3
Family income					
Lower income	77.0	60.6	32.0	34.5	11.7
Middle income	52.0	8.3	19.9	35.8	12.8
Higher income	44.2	0.7	7.5	37.1	12.9
			No financial need		
Total	20.7	0.3	4.4	12.5	7.0
Family income					
Lower income	17.1	0.0	2.7	7.2	9.8
Middle income	24.4	0.3	5.7	14.0	9.0
Higher income	19.3	0.3	4.0	12.0	6.1

NOTE: Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents. Percentages do not sum to 100 because undergraduates may receive more than one type of grant.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

Table 20.—Average grant amount awarded to full-time, full-year dependent undergraduates receiving grant aid according to source of grant, by financial need status and family income: 1995-96

	Total grant aid	Federal grant aid	State grant aid	Institutional grant aid	Other grant aid
			All		
Total	$4,357	$1,999	$1,887	$4,240	$1,688
Family income					
Lower income	4,678	2,094	2,092	4,246	1,751
Middle income	4,065	1,216	1,602	4,283	1,594
Higher income	3,917	--	1,579	4,144	1,757
			Financial need		
Total	4,608	2,000	1,904	4,483	1,729
Family income					
Lower income	4,684	2,094	2,092	4,248	1,751
Middle income	4,368	1,213	1,613	4,583	1,643
Higher income	5,007	--	1,412	4,974	1,922

Table 20.—Average grant amount awarded to full-time, full-year dependent undergraduates receiving grant aid according to source of grant, by financial need status and family income: 1995-96—Continued

	Total grant aid	Federal grant aid	State grant aid	Institutional grant aid	Other grant aid
			No financial need		
Total	2,345	1,501	1,638	2,430	1,495
Family income					
Lower income	--	--	--	--	--
Middle income	1,700	--	1,460	1,479	1,338
Higher income	2,677	--	1,736	2,877	1,582

--Sample size too small for reliable estimate.

NOTE: Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

INSTITUTIONAL GRANTS AND PRICE OF ATTENDANCE

Table 19 showed that, in aggregate, the likelihood of FTFY dependent undergraduates with need receiving institutional grants did not differ significantly by family income group. Figures 6 and 7 show the percentages of FTFY dependent undergraduates, by income level and financial need status, who received institutional grants in each of the price-of-attendance levels.

FTFY Dependent Undergraduates with Financial Need

In each income category, larger percentages of FTFY dependent undergraduates with financial need received institutional grants if they were enrolled at the highest price-of-attendance level (figure 6). Two-thirds (66 percent) of middle income students with need who were enrolled at the highest price-of-attendance level received institutional grants, a percentage that was about the same as those with need in the lower income group, but larger than the 46 percent of those with need in the higher income group who received institutional grants. About one-quarter (27 percent) of all FTFY dependent undergraduates who enrolled at the upper price-of-attendance level received institutional grants, with about the same percentage of those in the middle income group as those in the lower income and higher income groups receiving awards. About one in five lower income and middle income FTFY dependent undergraduates attending at the lowest

and moderate price-of-attendance levels received institutional grants (21 and 20 percent, and 17 and 20 percent respectively).

Middle income FTFY dependent undergraduates with need who were enrolled at the highest price-of-attendance level, received institutional grants averaging $6,516. This was about the same as the average award to those in the lower income group, but was more than the average $5,504 awarded to those in the higher income group.

FTFY Dependent Undergraduates with No Financial Need

Institutional grants also were awarded to FTFY dependent undergraduates who had not demonstrated need for federal financial aid. Since institutions may use an alternative methodology to assess students' financial need for privately-funded financial aid, these institutional grants may have been based on an alternate calculation of need.[30]

Nineteen percent of middle income FTFY dependent undergraduates with no demonstrated need for federal financial aid who were enrolled at the lowest price-of-attendance level received institutional grants, as did 14 percent of those at the moderate price-of-attendance level and 10 percent of those at the upper price-of-attendance level (figure 7). Since nearly all middle income, as well as lower income FTFY dependent undergraduates enrolled at the highest price-of-attendance level had financial need (99 percent and 98 percent respectively, see table 10), 93 percent of institutional grants to those without financial need who were attending at the highest price-of-attendance level went to higher income students.[31]

Summary

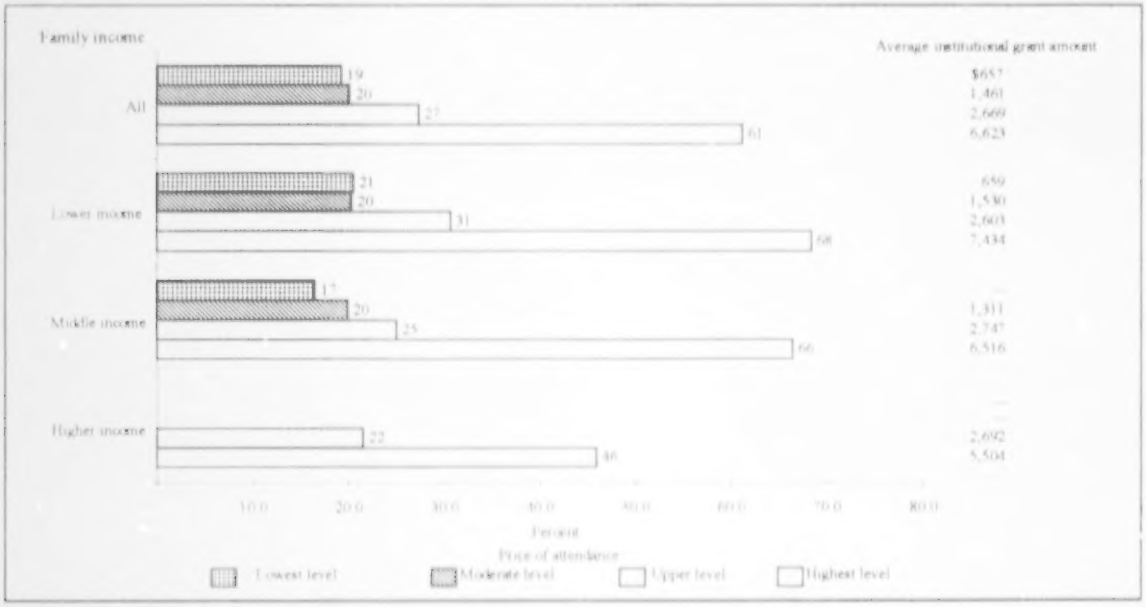
There were no significant differences by family-income level in the percentages of FTFY dependent undergraduates with need who received institutional grants, or in the average institu-

[30]Little (2000) relates that colleges and universities may use a College Board-designed formula known as the *Institutional Methodology (IM)* to assess financial need for privately-funded financial aid programs. The IM differs from the Federal Methodology (FM) used to determine eligibility for federal and most state-funded financial assistance, so undergraduates who are categorized as having no financial need using FM, may have financial need using the IM. Heller & Laird (1999) found, in a study using NPSAS:90 and NPSAS:96, the number of high-income students who received need-based institutional grants grew more than twice as fast (98 percent compared with 46 percent) as that of middle income students between 1989 and 1995, and almost four times that of low income students (26 percent) (pg. 12). This suggests that institutions were beginning to extend their need-based awards up the income ladder. Furthermore, the number of non-need grants to high-income recipients increased 16 percent but decreased for low and middle income students (19 percent and 12 percent respectively.)

[31]Not shown in table; U.S. Department of Education, National Center for Education Statistics, 1995–96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

tional awards that were given. In each income category, larger percentages of FTFY dependent undergraduates with need received institutional grants if they were enrolled at the highest price of attendance. At the highest price-of-attendance level, 66 percent of middle income FTFY dependent undergraduates with need received institutional grants, a higher percentage than the 46 percent in the higher income group, who also received a lower average award (figure 6).

Figure 6.—Percentage of full-time, full-year dependent undergraduates with financial need receiving institutional grant aid, and average amount of institutional grant aid for those receiving institutional grant aid, by price-of-attendance level and family income: 1995-96

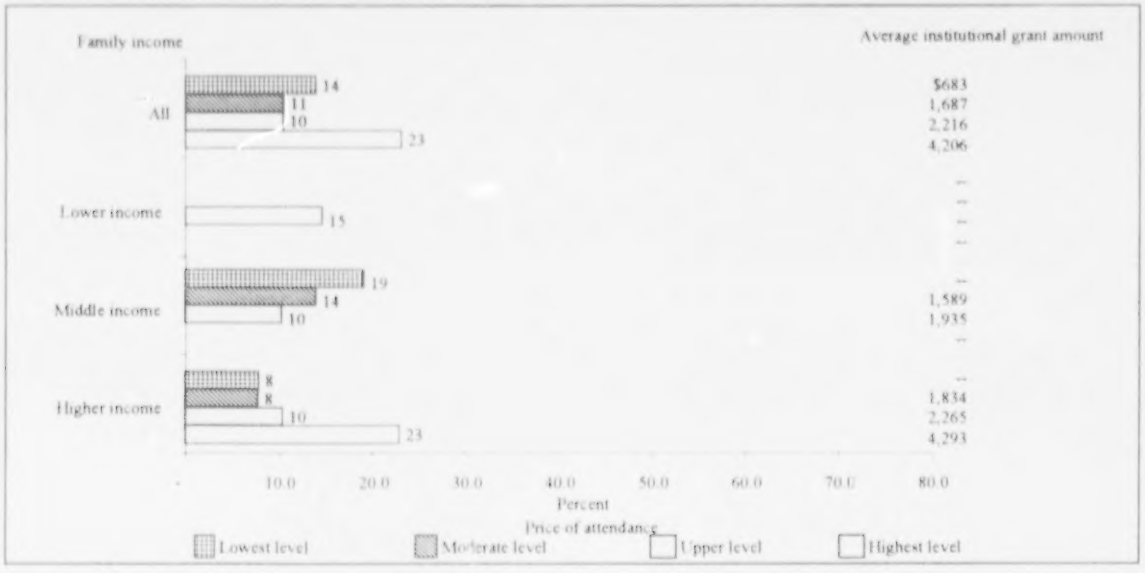


NOTE: Dependent undergraduates are those who attended only one institution and were citizens or permanent residents. Financial need is the difference between expected family contribution and price of attendance.

--Sample size too small for reliable estimate.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

Figure 7.—Percentage of full-time, full-year dependent undergraduates with no financial need receiving institutional grant aid, and average amount of institutional grant aid for those receiving institutional grant aid, by price-of-attendance level and family income: 1995-96



--Sample size too small for reliable estimate

NOTE: Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents. Financial need is the difference between expected family contribution and price of attendance.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

LOANS

Forty-four percent of all middle income FTFY dependent undergraduates received loans in 1995–96, with an average loan amount of $3,930 (tables 21, 22). The 44 percent borrowing rate was lower than the 50 percent of all lower income FTFY dependent undergraduates who borrowed, while the average amount of loans was not significantly different for middle income and lower income families.

One-half of middle income FTFY dependent undergraduates with financial need received student loans in 1995–96, which was about the same as those in the lower income group, but more than the percentage borrowing in the higher income group (44 percent, table 21). Forty-six percent of middle income FTFY dependent undergraduates with need used subsidized student loans and 12 percent used unsubsidized student loans. Since eligibility for federal subsidized

loans is income-related, a smaller percentage of students from higher income families used subsidized loans (34 percent) than those in the middle income group, and a larger percentage used unsubsidized loans (17 percent). The parents of 10 percent of middle income FTFY dependent undergraduates with financial need used PLUS loans. Middle income FTFY dependent undergraduates with financial need borrowed $4,033, on the average, which was about the same as the average total student loans of those in the lower income and higher income groups (table 22).

Almost one-quarter (23 percent) of middle income FTFY dependent undergraduates with no financial need received student loans, a percentage that was not statistically different from the 30 percent of lower income FTFY dependent undergraduates without financial need who had student loans (table 21). A smaller percentage (16 percent) of those with no need in the higher income group used student loans.

Within price-of-attendance levels, 7 percent of middle income FTFY dependent undergraduates with financial need attending at the lowest price-of-attendance level used student loans, as did one-third (34 percent) of those enrolled at the moderate price-of-attendance level of attendance, about one-half (49 percent) of those enrolled at the upper price-of-attendance level and almost two-thirds (64 percent) of those attending at the highest price-of-attendance level (figure 8). Average loans for middle income FTFY dependent undergraduates with need ranged from $3,109 for those attending at the moderate price-of-attendance level, to $4,507 for those enrolled at the highest price-of-attendance level. A larger percentage of middle income FTFY dependent undergraduates with financial need borrowed at the highest price-of-attendance level than did higher income students. At the upper price-of-attendance level, a larger percentage of lower income FTFY dependent undergraduates with need borrowed than those in the middle income group.

Table 21.—Percentage of full-time, full-year dependent undergraduates receiving loans according to type of loan, by financial need status and family income: 1995-96

	Total student loans	Subsidized student loans	Stafford unsubsidized student loans	PLUS unsubsidized loans*
		All		
Total	40.6	32.6	12.0	6.6
Family income				
Lower income	49.6	45.7	6.3	4.4
Middle income	43.9	36.4	14.5	8.4
Higher income	25.2	11.9	15.8	6.9
		Financial need		
Total	49.0	44.6	10.0	7.7
Family income				
Lower income	49.9	46.4	6.0	4.3
Middle income	49.6	45.9	12.4	10.1
Higher income	44.1	34.1	17.2	12.3
		No financial need		
Total	18.2	0.9	17.4	3.6
Family income				
Lower income	30.2	0.1	30.2	4.7
Middle income	23.3	1.2	22.1	2.4
Higher income	15.8	0.8	15.1	4.2

*PLUS loans are unsubsidized variable-interest rate loans awarded to parents of dependent students who are able to meet criteria for credit worthiness. PLUS loans are awarded up to the maximum amount of the cost of attendance at the institution minus any other financial aid.

NOTE: Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

Table 22.—Average loan amount received by full-time, full-year dependent undergraduates who received loans according to type of loan, by financial need status and family income: 1995-96

	Total student loans	Subsidized student loans	Stafford unsubsidized student loans	PLUS unsubsidized loans*
			All	
Total	$3,936	$3,548	$2,911	$6,355
Family income				
Lower income	3,921	3,678	2,560	4,936
Middle income	3,930	3,478	2,658	5,968
Higher income	3,986	3,221	3,387	8,076
			Financial need	
Total	3,986	3,561	2,542	6,184
Family income				
Lower income	3,913	3,678	2,393	4,839
Middle income	4,033	3,496	2,444	6,040
Higher income	4,122	3,261	2,952	8,270
			No financial need	
Total	3,579	1,887	3,471	7,308
Family income				
Lower income	--	--	--	--
Middle income	3,122	--	3,099	4,833
Higher income	3,798	--	3,632	7,791

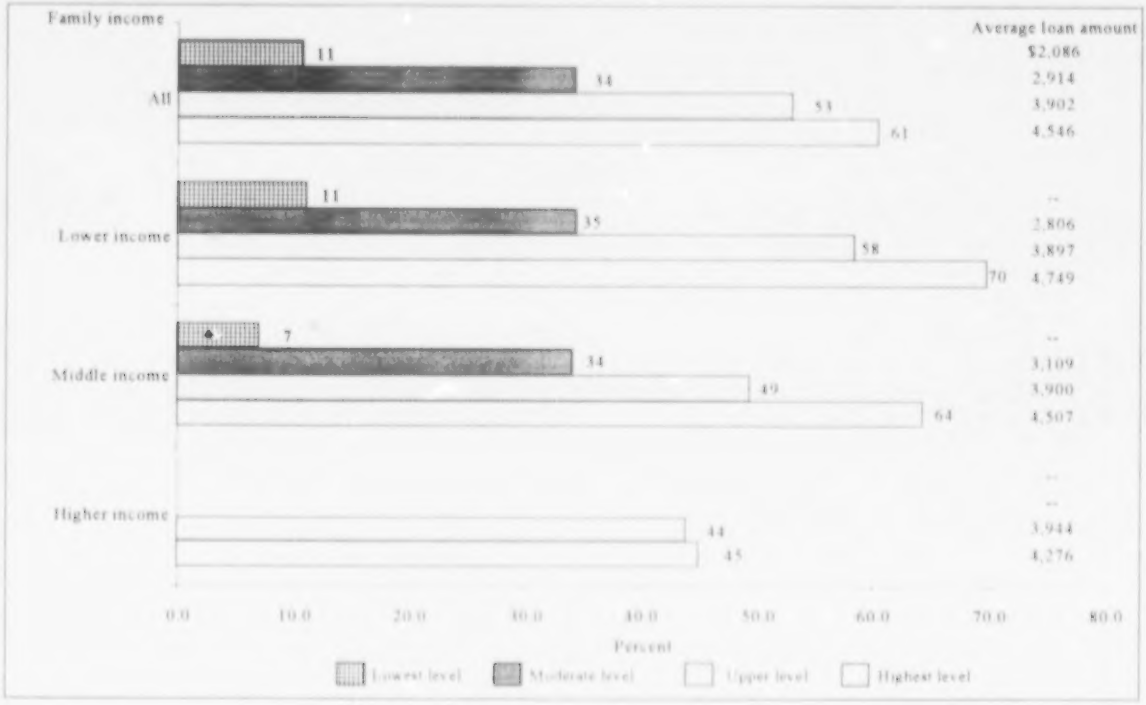
*PLUS loans are unsubsidized variable-interest rate loans awarded to parents of dependent students who are able to meet criteria for credit worthiness. PLUS loans are awarded up to the maximum amount of the cost of attendance at the institution minus any other financial aid.

--Sample size too small for reliable estimate.

NOTE: Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

Figure 8.—Percentage of full-time, full-year dependent undergraduates with financial need receiving loans, and average loan amount for those receiving loans, by price-of-attendance level and family income: 1995-96



--Sample size too small for reliable estimate

NOTE: Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents. Financial need is the difference between expected family contribution and price of attendance.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

SUMMARY AND CONCLUSION

The need for financial aid or other financial help, such as tuition tax credits to assist students from middle income families to attend the college of their choice, has received increased attention recently. This report examined the enrollment of middle income students by price of attendance and how they and their families pay for college, including the role of financial aid. Comparisons were made to those in the lower income group and those in the higher income group.

Almost one-half (49 percent) of middle income FTFY dependent undergraduates were enrolled at the upper price-of-attendance level in 1995–96, with the rest divided mostly among the moderate price-of-attendance level (21 percent) and the highest price-of-attendance level (23 percent). Eight percent were enrolled at the lowest price-of-attendance level. This was about the same as the enrollment distribution of FTFY dependent undergraduates in the lower income group. Smaller percentages of each of these two income groups were enrolled at the highest price-of-attendance level of $16,000 and above compared with those from higher income families, where 34 percent were enrolled at the highest price-of-attendance level.

It was those middle income FTFY dependent undergraduates with mid-range combined SAT scores of 825-1,199 who were less likely to be enrolled at the highest price-of-attendance level than were those with similar SAT scores in the higher income group. The distribution of lower income and middle income FTFY dependent undergraduates at each SAT-score level and price-of-attendance level was about the same. About one-half of those with SAT scores of 1,200 or more in each income group was enrolled at the highest price-of-attendance level.

Four out of five (79 percent) middle income FTFY dependent undergraduates had some demonstrated need for federal financial aid, compared with almost all of those in the lower income category (99 percent), and one-third of those in the higher income category. Overall, middle income FTFY dependent undergraduates had 31 percent of their price of attendance covered by financial aid, and more than one-half (58 percent) had unmet need after financial aid and EFC. Thirty-two percent of middle income FTFY dependent undergraduates with unmet need did not apply for financial aid. Reasons given included a belief that family income was too high (32 percent), or that the family or student could afford to pay (48 percent). For families who did apply but did not have their financial need met, it could mean that they are making great financial effort to attend their institution of choice.

Net price, or the difference between price of attendance and total financial aid, is the amount of out-of-pocket expenses that students must come up with to attend the colleges in which they enroll. Net price increased at each higher price-of-attendance level. The percentage of middle income FTFY dependent undergraduates who reported that their parents contributed to their college expenses was higher for those attending at the highest price-of-attendance level than for those enrolled at the moderate and upper price-of-attendance levels. Average student earnings were lower for those in the middle income group enrolled at the highest-price-of-attendance level than at other price-of-attendance levels.

It appears that middle income FTFY dependent undergraduates enrolled at the lowest and moderate price-of-attendance levels could cover much of the out-of-pocket expenses of their attendance from their own earnings, and that parents were able to contribute considerably less than would be expected using EFC. For the 49 percent of middle income FTFY dependent undergraduates enrolled at the upper price-of-attendance level, the results suggest a combination of student earnings and a parent contribution could meet the net price.

Net price minus student earnings was $8,919 for middle income FTFY dependent undergraduates enrolled at the highest price-of-attendance level, while average EFC was $7,024. This out-of-pocket expense gap may explain some of the difference in enrollment patterns of middle income and higher income FTFY dependent undergraduates with mid-range SAT scores. Another reason may be that institutions in the highest price-of-attendance level may not practice need-blind admissions, but balance applicants' academic strengths with their financial aid needs, resulting in the admission of fewer applicants with mid-range scores who have more financial need.

One-half (50 percent) of middle income full-time, full-year dependent undergraduates with financial need received loans, accounting for 42 percent of their aid, while 52 percent received grants, accounting for 44 percent of their aid, with work-study aid and other types of aid providing the remaining aid.

Institutional grants made up the most common source of grant aid for middle income FTFY dependent undergraduates, as well as for those in the higher income group. Overall, the percentages of FTFY dependent undergraduates with need who received institutional grants, and the average institutional awards that were given were about the same for each family-income level. About two-thirds of those with need in the lower and middle income groups received institutional grants at the highest price-of-attendance level compared with 46 percent of those in

the higher income group. The average institutional grant was smaller for those in the higher income group than in the middle income group. This source of support was an important component of financial aid packages that assisted in providing access at the highest price-of-attendance level.

Overall, middle income FTFY dependent undergraduates with need in 1995–96 borrowed at rates and amounts that were about the same as those with need in the lower income group. More middle income FTFY dependent undergraduates with financial need borrowed than did those in the higher income group. Borrowing rates for middle income FTFY dependent undergraduates increased with higher prices of attendance. At the upper price-of-attendance level, more lower income FTFY dependent undergraduates with financial need borrowed than did those in the middle income group, while at the highest price-of-attendance level, more from the middle income group borrowed than did those from the higher income group. The percentages borrowing for those with no financial need also were not significantly different between middle income and lower income FTFY dependent undergraduates, but were higher than the percentage borrowing in the higher income group.

Lower income and middle income FTFY dependent undergraduates have similar price of attendance enrollment patterns. Those from the lower income group use more financial aid than do those in the middle income group. Lower income and middle income FTFY dependent students do not enroll at similar price-of-attendance levels as their counterparts in the higher income group, with the exception of those undergraduates with SAT scores of 1,200 or more.

REFERENCES

Choy, S. P. *Low-Income Students: Who They Are and How They Pay for Their Education*, NCES 2000-169. (Washington, DC: U.S. Department of Education, National Center for Education Statistics, 2000).

Choy, S. P. *How Low-Income Undergraduates Financed Postsecondary Education: 1992-93*, NCES 96-161. (Washington, DC: U.S. Department of Education, National Center for Education Statistics, 1996).

Hearn, J. C. "The Relative Roles of Academic, Ascribed, and Socioeconomic Characteristics in College Destinations," *Sociology of Education*, v. 57, no. 1. (January 1984), pp. 22-30.

Hearn, J. C. "Attendance at Higher-Cost Colleges: Ascribed, Socioeconomic, and Academic Influences on Student Enrollment Patterns," *Economics of Education Review*, v. 7, no 1. (1988), pp. 65-75.

Heller, Donald E. and Laird, Thomas F. Nelson. "Institutional Need-Based and Non-Need Grants: Trends and Differences Among College and University Sectors," *Journal of Student Financial Aid*, v. 29, no. 3. (1999), pp. 7-24.

Hossler, D., Braxton, J., & Coopersmith, G. "Understanding Student College Choice," *Higher Education Handbook of Theory and Research, V.* J. C. Smart (ed.). (New York: Agathon Press, 1989), pp. 231-288.

Institute for Higher Education Policy (The). *State of Diffusion: Defining Student Aid in an Era of Multiple Purposes*. (Washington, D.C.: author, August 1999).

King, J. E. (ed.). *Financing a College Education. How It Works, How It's Changing*. (Phoenix, AZ: American Council on Education/Oryx Press, 1999).

Little, K. "Changes in Financial Aid Formula May Benefit Middle Income Families," *News from the College Board*. (January 19, 2000). Available www.collegeboard.org/press/html9900/html00119.html.

McPherson, M. S. Testimonial in the American Association of Universities' Council on Federal Regulations (CFR) Reports on Hearings & Markups for the week of February 7-11, 2000: *Hearing on The Rising Cost of College Tuition and the Effectiveness of Government Fi-*

nancial Aid, Senate Governmental Affairs (February 9, 2000). Available http://www.tulane.edu/~aau/CFR2.11.00.html.

McPherson, M. S. and Schapiro, M. O. *The Student Aid Game: Meeting Need and Rewarding Talent in American Higher Education*. (Princeton, NJ: Princeton University Press, 1998).

Riccobono, J. A., Whitmore, R. W., Gable, T. J., Traccarella, M. A., Pratt, D. J., Berkner, L. K. *National Postsecondary Student Aid Study, 1995-96 (NPSAS:96), Methodology Report*, NCES 98-073. (Washington, DC: U.S. Department of Education, National Center for Education Statistics, 1997).

U. S. Department of Education, *1999-2000 Student Financial Aid Handbook*. Available http://ifap.ed.gov/dev_csb/new/fsfabk.nsf/90CE956770FEDA9E852567AC006BD69B?OpenView&Start=1&Count=30.

APPENDIX A: SUPPLEMENTAL TABLES

Table A1.—Percentage of full-time, full-year dependent undergraduates with financial need receiving grant aid according to source of grant, by price-of-attendance level and family income: 1995-96

	Total grant aid	Federal grant aid	State grant aid	Institutional grant aid	Other grant aid
			All		
Total	62.9	31.9	24.2	35.5	12.3
Family income					
Lower income	77.1	60.6	32.1	34.6	11.8
Middle income	52.1	8.3	20.1	35.8	12.8
Higher income	44.2	0.7	7.9	37.6	12.4
			Lowest level		
Total	70.8	57.1	22.3	19.2	8.5
Family income					
Lower income	80.9	72.4	23.1	20.5	9.3
Middle income	44.1	12.7	21.9	16.5	6.8
Higher income	--	--	--	--	--
			Moderate level		
Total	59.7	42.1	23.6	20.1	7.0
Family income					
Lower income	72.4	61.5	29.7	20.3	6.7
Middle income	38.5	9.4	13.4	19.9	7.3
Higher income	--	--	--	--	--
			Upper level		
Total	58.4	30.8	24.5	27.3	12.0
Family income					
Lower income	76.3	59.0	33.7	30.6	12.5
Middle income	45.0	7.5	18.2	25.0	11.8
Higher income	32.5	0.7	7.3	21.5	11.0

Table A1.—Percentage of full-time, full-year dependent undergraduates with financial need receiving grant aid according to source of grant, by price-of-attendance level and family income: 1995-96—Continued

	Total grant aid	Federal grant aid	State grant aid	Institutional grant aid	Other grant aid
			Highest level		
Total	69.8	21.8	24.4	61.1	16.6
Family income					
Lower income	82.7	57.0	36.1	68.3	17.4
Middle income	73.4	8.7	26.8	66.4	18.4
Higher income	50.7	0.7	8.4	45.9	13.3

--Sample size too small for reliable estimate.

NOTE: Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

Table A2.—Average grant amount awarded to full-time, full-year dependent undergraduates with financial need receiving grant aid according to source of grant, by price-of-attendance level and family income: 1995-96

	Total grant aid	Federal grant aid	State grant aid	Institutional grant aid	Other grant aid
			All		
Total	$4,608	$2,000	$1,904	$4,483	$1,729
Family income					
Lower income	4,684	2,094	2,092	4,248	1,751
Middle income	4,368	1,213	1,613	4,583	1,643
Higher income	5,007	--	1,412	4,974	1,923
			Lowest level		
Total	2,095	1,838	1,105	657	730
Family income					
Lower income	2,256	1,890	1,092	659	--
Middle income	1,140	--	--	--	--
Higher income	--	--	--	--	--
			Moderate level		
Total	2,452	1,935	1,200	1,461	1,073
Family income					
Lower income	2,718	1,996	1,233	1,530	986
Middle income	1,580	1,215	1,078	1,311	1,174
Higher income	--	--	--	--	--
			Upper level		
Total	3,356	1,889	2,001	2,669	1,371
Family income					
Lower income	3,828	1,998	2,245	2,603	1,521
Middle income	2,646	1,023	1,547	2,747	1,226
Higher income	2,603	--	1,872	2,692	1,291

Table A2.—Average grant amount awarded to full-time, full-year dependent undergraduates with financial need receiving grant aid according to source of grant, by price-of-attendance level and family income: 1995-96—Continued

	Total grant aid	Federal grant aid	State grant aid	Institutional grant aid	Other grant aid
			Highest level		
Total	7,941	2,419	2,329	6,623	2,424
Family income					
Lower income	9,793	2,586	2,946	7,434	2,750
Middle income	7,343	1,570	1,891	6,516	2,289
Higher income	5,787	--	1,248	5,504	2,210

--Sample size too small for reliable estimate

NOTE: Dependent undergraduates are those who attended only one institution and were citizens or permanent residents.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

Table A3.—Percentage of full-time, full-year dependent undergraduates with no financial need receiving grant aid according to source of grant, by price-of-attendance level and family income: 1995-96

	Total grant aid	Federal grant aid	State grant aid	Institutional grant aid	Other grant aid
			All		
Total	20.7	0.3	4.4	12.5	7.0
Family income					
Lower income	17.1	0.0	2.7	7.2	9.8
Middle income	24.4	0.3	5.7	14.0	9.0
Higher income	19.3	0.3	4.0	12.0	6.1
			Lowest level		
Total	24.3	0.0	6.6	13.9	6.4
Family income					
Lower income	--	--	--	--	--
Middle income	33.9	0.0	8.2	19.1	11.0
Higher income	13.0	0.0	5.1	7.9	0.0
			Moderate level		
Total	19.8	0.4	5.3	10.5	6.6
Family income					
Lower income	--	--	--	--	--
Middle income	23.2	0.9	4.6	14.0	7.8
Higher income	16.8	0.0	5.7	7.8	5.6
			Upper level		
Total	17.9	0.2	3.7	10.4	6.7
Family income					
Lower income	28.2	0.0	0.8	14.6	17.5
Middle income	19.3	0.0	5.0	10.3	8.9
Higher income	17.3	0.3	3.3	10.4	5.9

Table A3.—Percentage of full-time, full-year dependent undergraduates with no financial need receiving grant aid according to source of grant, by price-of-attendance level and family income: 1995-96—Continued

	Total grant aid	Federal grant aid	State grant aid	Institutional grant aid	Other grant aid
			Highest level		
Total	30.4	0.7	4.2	23.1	9.0
Family income					
Lower income	--	--	--	--	--
Middle income	--	--	--	--	--
Higher income	29.8	0.7	3.9	22.9	8.8

--Sample size too small for reliable estimate

NOTE: Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

Table A4.—Average grant amount awarded to full-time, full-year dependent undergraduates with no financial need receiving grant aid according to source of grant, by price-of-attendance level and family income: 1995-96

	Total grant aid	Federal grant aid	State grant aid	Institutional grant aid	Other grant aid
			All		
Total	$2,345	$1,501	$1,638	$2,430	$1,495
Family income					
Lower income	--	--	--	--	--
Middle income	1,700	--	1,460	1,479	1,338
Higher income	2,677	--	1,736	2,877	1,582
			Lowest level		
Total	898	--	952	683	946
Family income					
Lower income	--	--	--	--	--
Middle income	--	--	--	--	--
Higher income	--	--	--	--	--
			Moderate level		
Total	1,816	1,504	2,013	1,687	1,024
Family income					
Lower income	--	--	--	--	--
Middle income	1,708	--	--	1,589	1,047
Higher income	1,913	--	2,190	1,834	956
			Upper level		
Total	2,316	1,500	1,753	2,216	1,733
Family income					
Lower income	--	--	--	--	--
Middle income	2,269	--	--	1,935	1,850
Higher income	2,321	--	1,867	2,265	1,703

Table A4.—Average grant amount awarded to full-time, full-year dependent undergraduates with no financial need receiving grant aid according to source of grant, by price-of-attendance level and family income: 1995-96—Continued

	Total grant aid	Federal grant aid	State grant aid	Institutional grant aid	Other grant aid
			Highest level		
Total	3,910	1,500	1,202	4,206	1,737
Family income					
Lower income	--	--	--	--	--
Middle income	--	--	--	--	--
Higher income	4,012	--	1,164	4,293	1,752

--Sample size too small for reliable estimate

NOTE: Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System

Table A5.—Percentage of full-time, full-year dependent undergraduates with financial need receiving loans according to type of loan, by price-of-attendance level and family income: 1995-96

	Total student loans	Subsidized student loans	Stafford unsubsidized student loans	PLUS unsubsidized loans*
		All		
Total	49.0	44.6	10.0	7.7
Family income				
Lower income	49.9	46.4	6.0	4.3
Middle income	49.6	45.9	12.4	10.1
Higher income	44.1	34.1	17.2	12.3
		Lowest level		
Total	10.8	9.6	2.0	0.0
Family income				
Lower income	11.1	10.7	1.4	0.0
Middle income	7.1	7.1	4.1	0.0
Higher income	--	--	--	--
		Moderate level		
Total	34.3	31.2	7.1	1.6
Family income				
Lower income	34.5	31.1	3.5	0.5
Middle income	34.1	31.8	12.7	3.7
Higher income	--	--	--	--
		Upper level		
Total	53.1	49.1	12.1	8.4
Family income				
Lower income	58.4	55.1	7.8	5.5
Middle income	49.4	46.0	14.3	10.0
Higher income	43.6	33.7	24.0	15.9

Table A5.—Percentage of full-time, full-year dependent undergraduates with financial need receiving loans according to type of loan, by price-of-attendance level and family income: 1995-96—Continued

	Total student loans	Subsidized student loans	Stafford unsubsidized student loans	PLUS unsubsidized loans*
		Highest level		
Total	60.5	53.9	10.4	12.0
Family income				
Lower income	69.8	64.6	7.3	8.7
Middle income	64.3	59.1	10.1	15.1
Higher income	45.0	35.2	14.2	11.3

*PLUS loans are unsubsidized variable-interest rate loans awarded to parents of dependent students who are able to meet criteria for credit worthiness. PLUS loans are awarded up to the maximum amount of the cost of attendance at the institution minus any other financial aid

--Sample size too small for reliable estimate

NOTE: Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System

Table A6.—Average loan amount received by full-time, full-year dependent undergraduates with financial need who received loans according to type of loan, by price-of-attendance level and family income: 1995-96

	Total student loans	Subsidized student loans	Stafford unsubsidized student loans	PLUS unsubsidized loans*
		All		
Total	$3,986	$3,561	$2,542	$6,184
Family income				
Lower income	3,913	3,678	2,393	4,839
Middle income	4,033	3,496	2,444	6,040
Higher income	4,122	3,261	2,952	8,270
		Lowest level		
Total	2,086	1,876	1,599	--
Family income				
Lower income	--	--	--	--
Middle income	--	--	--	--
Higher income	--	--	--	--
		Moderate level		
Total	2,914	2,635	2,132	3,190
Family income				
Lower income	2,806	2,804	1,812	--
Middle income	3,109	2,388	2,297	--
Higher income	--	--	--	--
		Upper level		
Total	3,902	3,460	2,411	4,753
Family income				
Lower income	3,897	3,647	2,204	3,606
Middle income	3,980	3,327	2,355	5,073
Higher income	3,944	2,766	2,954	5,825

Table A6.—Average loan amount received by full-time, full-year dependent undergraduates with financial need who received loans according to type of loan, by price-of-attendance level and family income: 1995-96—Continued

	Total student loans	Subsidized student loans	Stafford unsubsidized student loans	PLUS unsubsidized loans*
			Highest level	
Total	4,546	4,097	2,991	7,994
Family income				
Lower income	4,749	4,399	3,213	6,710
Middle income	4,507	4,083	2,845	7,565
Higher income	4,276	3,522	3,006	9,857

*PLUS loans are unsubsidized variable-interest rate loans awarded to parents of dependent students who are able to meet criteria for credit worthiness. PLUS loans are awarded up to the maximum amount of the cost of attendance at the institution minus any other financial aid.

–Sample size too small for reliable estimate.

NOTE: Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

APPENDIX B: GLOSSARY

This glossary describes the variables used in this report. The variables were taken directly from the NCES NPSAS:96 Undergraduate Data Analysis System (DAS). This is an NCES software application that generates tables from the NPSAS:96 data. A description of the DAS software can be found in appendix C. The variables used in this analysis were either items taken directly from the surveys or derived by combining one or more items in these surveys.

The variables listed in the index below are in the order they appear in the report; the glossary is in alphabetical order by DAS variable name (displayed along the right-hand column).

INDEX OF VARIABLES

Attendance status	ATTNSTAT
Dependent	DEPEND
Citizenship	CITIZEN2
Family income	DEPINC
Family income in 1994 of less than 125 percent of poverty level	PCTPOV94
Pell grant	PELLAMT
Stafford subsidized loan	STAFSUB
Institution type and highest degree	SECTOR9
Expected family income at any post-secondary institution	EFC4
Price-of-attendance level	BUDGETFT
Gender	GENDER
Race/ethnicity	RACE
Parent family size	PFAMNUM
Highest education completed by either parent	PAREDUC
Student housing status	LOCALRES
Worked while enrolled	HRSWORK
Undergraduate level	UGLEVEL1
Number of Advanced Placement (AP) tests taken	APTEST
Scholastic Assessment Test (SAT) combined score	TESATDER
Financial need status	FTNEED1
Net price	NETCST5
Unmet need status	FTNEED2
Ratio of total aid to price-of-attendance	AIDCST2
Financial aid application status	AIDAPP
Did not want debt	SNODEBT
Family income too high	SHINCOME
Family or student could pay	SFAMPAY
Total aid	TOTAID
Earnings while enrolled	WKINC
Parents provided any contribution	PARCNTRB
Parents helped with direct contribution	PARPDIR
Allowance from parents	ALLOWNCE
Other type of support from parents	SCSUPAMT
Total loan	TOTLOAN2
Ratio of loans to total aid	LOANPCT
Grant aid	TOTGRT
Ratio of grant aid to total aid	GRTPCT
Total work-study	TOTWKST
Ratio of work-study to total aid	WORK?CT
Total other aid	TOTOTHR2
Federal grant aid	TFEDGRT
State grant aid	STGTAMT
Institutional grant aid	INGRTAMT
Other grant aid	OTHGTAMT
Total student loans	TOTLOAN
Subsidized loans	T4SUB95
Stafford unsubsidized loan	STAFUNSB
PLUS unsubsidized loans	PLUSAMT3

VARIABLE LIST

Financial aid application status **AIDAPP**

This variable indicates whether the student ever applied for financial aid in 1995–96. A student who was not interviewed (did not have telephone survey data) and had no record of an aid application either at the school or through the U.S. Department of Education's Central Processing system, was assumed to have not applied.

Received aid
Did not receive aid

Ratio of total aid to price of attendance **AIDCST2**

This variable indicates the ratio of total aid to the full-time, full-year student budget during 1995–96 for full-time, full-year students. This is equal to the total of all aid, divided by the full-time, full-year student budget.

Allowance from parents **ALLOWNCE**

This variable indicates the amount of allowance students reported receiving on a monthly basis from their parents. Constructed by examining student-reported allowance (SCALWAMT) and the frequency the allowance was given (SCALWFRQ). If the frequency reported was per week, then the variable was set equal to the amount reported multiplied by 4.33. If the frequency reported was per month, then the variable was set equal to the amount reported. If the frequency reported was per year, the variable was set equal to the amount reported divided by 12. If the frequency reported was per term, the type of term at the student's institution was examined and the amount reported was divided by 4.5 if the terms were semesters, divided by 2 if the terms were quarters, divided by 3 if the terms were trimesters, and set to missing if the terms differed by program. This question was asked only of students aged 30 or younger. Values for students over 30 were set to zero.

Number of Advanced Placement (AP) tests taken **APTEST**

This variable provides a count of advanced placement tests the student reported having taken. The question was worded as follows: Did you take any AP tests (advanced placement)? Which ones did you take and what was your score?

Attendance status **ATTNSTAT**

This variable indicates a student's attendance intensity and persistence during 1995–96. Intensity refers to the student's full- or part-time attendance while enrolled. Persistence refers to the number of months a student was enrolled during the year. Students were considered to have enrolled for a full year if they were enrolled 8 or more months during the NPSAS year. Students did not have to be enrolled for a full month in order to be considered enrolled for that month.

Full-time, full-year — Enrolled 8 or more months full-time during 1995–96 at one institution. Additional months enrolled could be part-time enrollment.

Price-of-attendance level **BUDGETFT**

This variable indicates the total student budget amount for full-time, full-year students at the NPSAS institution, including tuition and fees and total nontuition cost allowances. Student budgets are based on typical or average expected expenses, and vary with the student's dependency status and residence arrangements. Full-time budgets were estimated for students based on the actual reported amounts or institutional averages of nontuition costs for categories of students, based on local residence and dependency status and average full-time tuition. This is the typical budget for a full-time, full-year student.

Lowest price-of-attendance level (less than $6,000)
Moderate price-of-attendance level ($6,000-$8,499)
Upper price-of-attendance level ($8,500-$15,999)
Highest price-of-attendance level ($16,000 or more)

Citizenship **CITIZEN2**

This variable indicates the student's citizenship status and federal financial aid eligibility. This variable is constructed from citizenship status reported on Federal Application for Financial Student Aid (FAFSA). Where not available, student-reported data, institution-reported data, or data from the 1996-97 FAFSA were used.

Dependent **DEPEND**

Student's dependency status.

Dependent — Students were financially dependent if they did not meet any of the criteria for independence (see below).

Independent — A student was considered independent by meeting one of the following criteria:

- Was 24 or older as of 12/31/95.
- Was a veteran.
- Was an orphan or ward of the court.
- Had legal dependents, other than spouse.
- Was married, and not claimed by parents on 1995 tax returns.
- Was a graduate student and not claimed as a dependent by parents on 1995 tax return.

Family income **DEPINC**

This indicates dependent student parents' total income for 1994. This value is equal to total income for dependent students.

Lower income (less than $35,000)
Middle income ($35,000-$69,999)
Higher income ($70,000 or more)

Expected family contribution **EFC4**

This variable indicates the composite expected family contribution (EFC). This provides the best estimate of the student's EFC, derived from examining the EFC values reported in the Pell payment file, the U.S. Department of Education's Central Processing System (CPS) matching records, the NPSAS institution, or estimated by regressions

based on dependency, family size, income, assets, and number in college. Differences in the timing of these sources, differences in the institutions to which they refer, changes in the student's dependency status and financial situation during the period of a year, and the potential use of the professional judgment changes by Financial Aid Officers at any time or at any institution make it impossible to determine a single definitive EFC value or dependency status for all students during the entire year. For Pell grant recipients, the EFC on the Pell payment file was always used. For other financial aid recipients the primary EFC from the most recent CPS record was used if available, or an EFC reported by the NPSAS institution.

Financial need status **FTNEED1**

This variable indicates the student budget of full-time, full-year students minus EFC. For estimates of average dollar amounts, the average amount received is the average of all students who had financial need. Negative values were recoded to zero.

Financial need
No financial need

Unmet need status **FTNEED2**

This variable indicates full-time, full-year student budget, minus composite EFC and total financial aid. Negative values were recoded to zero.

Did have unmet need
Did not have unmet need

Gender **GENDER**

This variable indicates student gender. Based on student-reported gender, gender reported by sample institution, or gender reported on FAFSA. Where not available GENDER was assigned based on students' first name.

Male
Female

Ratio of grant aid to total aid **GRTPCT**

This variable indicates the percentage of total aid that was grant aid during 1995–96. The ratio is equal to the total amount of grant aid (TOTGRT), divided by total aid amount (TOTAID), and multiplied by 100. This variable is only computed for those who had some aid.

Worked while enrolled **HRSWORK**

This variable indicates the average hours the student worked per week while enrolled during 1995–96. The variable is based on students' reports of average hours worked per week while enrolled during 1995–96. Students with zero jobs during 1995–96 were recoded to zero. Average hours greater than 60 were recoded to 60.

Did not work
Worked 1-19 hours per week while enrolled
Worked 20-29 hours per week while enrolled
Worked 30 or more hours per week while enrolled

Institutional grant aid **INGRTAMT**

This variable indicates the total amount of institutional grant aid received during 1995–96. This includes all grants and scholarships, and tuition waivers received during the NPSAS year.

Ratio of loans to total aid **LOANPCT**

This variable indicates the ratio of loans to total aid, or the percentage of total aid that is loans received during 1995–96. The ratio is equal to the total amount of all loans, excluding PLUS (TOTLOAN) divided by total amount of all aid (TOTAID) multiplied by 100. This variable is only computed for students who had some amount of aid.

Student housing status **LOCALRES**

This variable indicates the student's housing status as reported either by the NPSAS school or by the student.

On campus
Off campus
With parents or relatives

Net price **NETCST5**

This variable indicates the net price, or the full-time, full-year student budget minus total aid. This variable was calculated for students enrolled full-time for at least 8 months during 1995–96.

Other grant aid **OTHGTAMT**

This variable indicates the amount of grants that were not federal, state, or institutional, including National Merit Scholarships, other private aid, and employee tuition reimbursements received during 1995–96.

Parents provided any contribution **PARCNTRB**

This variable indicates whether the student received any parental contribution: a direct contribution to the institution, an allowance, or indirect costs.

Highest education completed by either parent **PAREDUC**

This variable indicates the parents' highest level of education. This is equal to the maximum of the highest level of education completed by father and highest level of education completed by mother.

Less than high school
High school graduate
Some postsecondary education
Bachelor's degree
Master's degree
Doctoral or first-professional degree

Parents helped with direct contribution **PARPDIR**

This variable indicates whether parents reported making a direct contribution to the institution to pay for tuition (PLPDSCTF), housing (PLPDSCHS), meals (PLPDSCML), or books (PLPDSCBS). If not available, the student's report of direct payment for tuition (SCPARTUI), room & board (SCPARRM), or books (SCPARBK) was used.

Family income in 1994 of less than 125 percent of poverty level **PCTPOV94**

This variable indicates the family income in 1994 as a percentage of the federal poverty level thresholds for 1994. This variable is based on family size, total income and dependency. The calculation reflects the family of the parents of dependent students. The variable is derived from total income in 1994, and household size based on dependency. A maximum is set at 1,000 (ten times poverty threshold) and all values above 1,000 are recoded to 1,000.

Less than 125 percent of poverty level
125 percent of poverty level or higher

Pell grant **PELLAMT**

This variable indicates the federal Pell grant amount received during 1995–96 at all schools attended. Institutional reports were supplemented with the 1995–96 Pell Grant payment file. Pell grants are awarded to undergraduates who have not yet received a Bachelor's or first professional degree. They are intended as a financial base, to which other financial aid awards can be added. The amount of a Pell grant depends on EFC, cost of attendance, and attendance status. In 1995–96 the maximum Pell grant amount was $2,340.

Parent family size **PFAMNUM**

This variable indicates the number of people the respondent's parents supported between July 1, 1995 and June 30, 1996, including the respondent and respondent's parents (thus, the variable has a minimum of 2). The variable is constructed using parent family size reported on the FAFSA. If not available, the student-reported data were used.

The FAFSA family size definition is as follows: Anyone in the immediate family who receives more than 50 percent support from the dependent student's parents, or the independent student and spouse, may be counted in the household size even if that person does not reside in the house, as in the case of a sibling who is over 24 but still in college and receiving the majority of support from parents. Siblings who are dependent as of the application date are also included, regardless of whether they received at least 50 percent of their support from their parents. Any other person who resides in the household and receives more than 50 percent support from the parents may also be counted (such as an aunt, cousin, etc.), as long as the support is expected to continue throughout the award year. An unborn

child who will be born during the award year may also be counted in the household size. Household size and tax exemptions are not necessarily the same. Exemptions look at the previous year or tax year, while household size refers to the school year for which the student is applying for aid. If the parents are divorced, the parent that the student lived with the most during the past year is counted. It does not make a difference which parent claims the student as a dependent for tax purposes. If the student did not live with either parent or lived equally with each parent, the parental information must be provided for the parent from whom the student received the most financial support, or the parent from whom the student received the most support the last time support was given. If the student is a dependent student and the parent is remarried, the stepparent's information must be included, or the student will not be considered for federal student financial aid.

Missing values and values less than or equal to two were recoded to minimum possible family size based on parent's marital status.

Two
Three
Four
Five or more

PLUS unsubsidized loans **PLUSAMT3**

This variable indicates the total federal PLUS loans received by the parents during 1995–96. PLUS loans are unsubsidized variable-interest rate loans awarded to parents of dependent students who are able to meet criteria for credit worthiness. PLUS loans are awarded up to the maximum amount of the cost of attendance at the institution minus any other financial aid. Two types of PLUS loans are available to eligible students, direct and FFEL loans. Direct loans are available through the institution, and FFEL loans are offered by commercial lenders such as banks, credit unions, or savings and loans associations. The interest rate on these loans cannot exceed 9 percent.

Race/ethnicity **RACE**

American Indian/Alaskan Native	A person having origins in any of the original peoples of North America and who maintains cultural identification through tribal affiliation or community recognition.
Asian/Pacific Islander	A person having origins in any of the Asian or Pacific Islands: original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or Pacific Islands. This includes people from China, Japan, Korea, the Philippine Islands, Samoa, India and Vietnam.
Black, non-Hispanic	A person having origins in any of the black racial groups of Africa, and not of Hispanic origin.
Hispanic	A person of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.
White, non-Hispanic	A person having origins in any of the original peoples of Europe, North Africa, or the Middle East (except those of Hispanic origin).
Other	A person not in one of the above categories.

Other type of support from parents **SCSUPAMT**

This variable represents the estimated student-reported value of the support from parents for indirect costs other than tuition, room and board, books and supplies, or an allowance (PARPDIR). The exact question wording varied depending on the type of student and whether the student was living on campus. If the student was unable to provide a dollar amount, they were asked to estimate whether they thought the amount was more than $1,000. If the student thought it was worth more than $1,000, they were asked a series of items as to what kinds of support.

None
Less than $1,000
$1,000 or more

Institution type and highest degree **SECTOR9**

This variable indicates the institution type and highest degree offered at the NPSAS institution where student was sampled. Constructed by combining the CONTROL of the institution and the highest level of degree offered at that institution.

Public, less-than-4-year
Public, 4-year, nondoctoral-granting
Public, doctoral-granting
Private, not-for-profit, less-than-4-year
Private, not-for-profit, 4-year, nondoctoral-granting
Private, not-for-profit, doctoral-granting
Private, for-profit

Family or student could pay **SFAMPAY**

This variable indicates a student-reported reason he/she did not apply for financial aid, such as the family and student could pay. The question was worded as follows: What were the reasons you and your family did not apply for financial aid?

Family income too high **SHINCOME**

This variable indicates a student-reported reason he/she did not apply for financial aid, such as the family income was too high to qualify. The question was worded as follows: What were the reasons you and your family did not apply for financial aid?

Did not want debt **SNODEBT**

This variable indicates a student-reported reason he/she did not apply for financial aid, such as not being willing to go into debt. The question was worded as follows: What were the reasons you and your family did not apply for financial aid?

Stafford subsidized loan **STAFSUB**

This variable indicates the amount of subsidized Stafford (FFEL or Direct) loans received by the student during 1995–96.

Stafford unsubsidized loan **STAFUNSB**

This variable indicates the amount of unsubsidized Stafford loans the student received during 1995–96.

State grant aid **STGTAMT**

This variable indicates the amount of state grants and scholarships, fellowships and traineeships, including the federal portion of State Student Incentive Grants received by the student during 1995–96.

Subsidized loans **T4SUB95**

This variable indicates the amount of Title IV subsidized loans the student received during 1995–96. This variable sums the FFEL, Stafford subsidized, direct subsidized and Perkins loans received in 1995–96.

Scholastic Assessment Test (SAT) combined score **TESATDER**

This variable reports the SAT combined score, derived as either the sum of SAT verbal and math scores or the ACT composite score converted to an estimated SAT combined score using a concordance table from the following source: Marco, G., Abdel-fattah, A. & Baron, P. *Methods Used to Establish Score Comparability on the Enhanced ACT Assessment and the SAT.* (New York: College Entrance Examination Board, 1992). Constructed in the following order of precedence from agency-reported, institution-reported, or student-reported SAT or ACT.

Federal grant aid **TFEDGRT**

This variable indicates the total amount of federal grants, including Pell, Supplemental Educational Opportunity Grants, and other federal grant/scholarships or fellowship/traineeships, but not including veteran's benefits received by the student during 1995–96.

Total aid **TOTAID**

This variable reflects the total amount of financial aid received from all sources in 1995–96, including federal, state, institution, and other sources received by the student. The percentage of students who received any financial aid is the percentage with positive amounts recorded for this variable. The average amount received is the average of all students who received any financial aid.

Grant aid **TOTGRT**

This variable indicates the total amount of all grants and scholarships, federal, state, institutional, and other received by the student during 1995–96. Grants are a type of student financial aid that does not require repayment or employment. Grants include scholarships and fellowships. Tuition waivers and employer aid are considered grant aid. The percentage of students with grants is the percentage with positive amounts recorded for this variable. The average amount received is the average of all students who received grants.

Total student loans **TOTLOAN**

This variable indicates the total amount of loans the student received regardless of the source. Loans are a type of student financial aid that advance funds and are evidenced by a promissory note requiring the recipient to repay the specified amounts under prescribed conditions. The percentage of students with loans is the percentage with positive amounts recorded for this variable. The average amount received is the average of all students who received loans. This does not include PLUS.

Total loan **TOTLOAN2**

This variable indicates the total amount of all the loans the student received regardless of the source. The percentage of students with loans is the percentage with positive amounts recorded for this variable. The average amount received is the average of all students who received loans. This does include PLUS and was not used to calculate TOTAID.

Total other aid **TOTOTHR2**

This represents the total aid not classified by type as grants, loans, or work-study. This is equal to TOTOTHR minus PLUSAMT3. PLUS loans to parents are classified as "other" type rather than as loans in the award matrix.

Total work-study **TOTWKST**

This variable indicates the total amount of all work study awards received during 1995–96. This is equal to the sum of federal work-study amount, state work-study amount, institution work-study amount, and other unclassified work-study amounts.

Undergraduate level **UGLEVEL1**

This variable indicates the students' undergraduate level during the first term of 1995–96. First-time beginning students were categorized separately as were seniors finishing in 1995–96. "Other" includes unclassified undergraduates and students with degrees who may be taking an undergraduate's course.

First-year/freshman
Second-year/sophomore
Third-year/junior
Fourth-year/senior
Other

Earnings while enrolled **WKINC**

This variable indicates the amount of student income earned from working while enrolled in 1995–96. Income was constructed by examining student reported income from working while enrolled and the frequency of that income. If the frequency reported was per hour then the variable was set equal to the amount reported, multiplied by the number of hours worked per week while enrolled (SEHOURS), then multiplied by 4.33 and then by the number of months enrolled. If the frequency reported was per week, then the variable was set equal to the amount reported (SEENRAMT), and multiplied by 4.33 then by the number of months enrolled. If the frequency reported was per month, then the variable was set equal to the amount reported and then multiplied by the number of months enrolled. If the frequency reported was per year, then the variable was set equal to the amount reported. If the frequency reported was per term, the type of term at the student's institution was examined and the amount reported was divided by 4.5 and then multiplied by the number of months enrolled, if the terms were semesters, divided by 2 if the terms were quarters and then multiplied by the number of months enrolled, divided by 3 if the terms were trimesters and then multiplied by the number of months enrolled, and set to missing if the terms differed by program.

Ratio of work-study to total aid **WORKPCT**

This variable indicates the ratio of work-study to total aid, or percentage of total aid that is work-study received during 1995–96. The ratio is equal to total amount of work-study aid (TOTWKST), divided by total amount of all aid, including PLUS and VA/DOD (TOTAID). This variable is only computed for students who had some amount of aid (TOTAID >0).

APPENDIX C: TECHNICAL NOTES

THE 1995-96 NATIONAL POSTSECONDARY STUDENT AID STUDY (NPSAS:96)

The 1995–96 National Postsecondary Student Aid Study (NPSAS:96) is a comprehensive nationwide study conducted by the Department of Education's National Center for Education Statistics (NCES) to determine how students and their families pay for postsecondary education. It also describes demographic and other characteristics of students enrolled. The study is based on a nationally representative sample of approximately 41,400 undergraduates (including 27,000 student interviews) enrolled in more than 830 postsecondary education institutions. Students attending all types and levels of institutions are represented in the sample, including public and private institutions and less-than-2-year institutions, less-than-4-year institutions, and 4-year colleges and universities. The weighted effective response rate for the telephone interviews was 76.2 percent. The study is designed to address the policy questions resulting from the rapid growth of financial aid programs, and the succession of changes in financial aid program policies since 1986. The first NPSAS study was conducted in 1986-87, then again in 1989-90, and 1992-93.[32]

ACCURACY OF ESTIMATES

The statistics in this report are estimates derived from a sample. Two broad categories of error occur in such estimates: sampling and nonsampling errors. Sampling errors occur because observations are made only on samples of students, not on entire populations. Nonsampling errors occur not only in sample surveys, but also in complete censuses of entire populations. Nonsampling errors can be attributed to a number of sources: inability to obtain complete information about all students in all institutions in the sample (some students or institutions refused to participate, or students participated but answered only certain items); ambiguous definitions; differences in interpreting questions; inability or unwillingness to give correct information; mistakes in recording or coding data; and other errors of collecting, processing, sampling, and imputing missing data.

[32]For more information on the NPSAS survey, consult U.S. Department of Education, National Center for Education Statistics, *Methodology Report for the 1995-96 National Postsecondary Student Aid Study* (NCES 98-0783) (Washington, D.C.: 1998).

DATA ANALYSIS SYSTEM

The estimates presented in this report were produced using the NPSAS:96 Undergraduate Data Analysis System (DAS). The DAS software makes it possible for users to specify and generate their own tables from the NPSAS:96 data. With the DAS, users can replicate or expand upon the tables presented in this report. In addition to the table estimates, the DAS calculates proper standard errors[33] and weighted sample sizes for these estimates. For example, table C1 contains standard errors that correspond to table 22, and was generated by the DAS. If the number of valid cases is too small to produce a reliable estimate (less than 30 cases), the DAS prints the message "low-N" instead of the estimate.

Table C1.—Standard errors for table 22: Average loan amount received by full-time, full-year dependent undergraduates who received loans according to type of loan, by financial need status and family income: 1995-96

	Total student loans	Subsidized student loans	Stafford unsubsidized student loans	PLUS unsubsidized loans*
			All	
Total	36.1	33.8	46.5	157.8
Family income				
Lower income	55.3	48.9	136.1	239.9
Middle income	45.9	43.3	58.5	181.0
Higher income	62.8	81.6	49.4	291.2
			Financial need	
Total	37.9	33.6	56.2	169.7
Family income				
Lower income	55.0	48.4	117.7	234.8
Middle income	45.8	42.7	71.0	187.1
Higher income	91.0	83.1	87.0	396.1

[33]The NPSAS:96 sample is not a simple random sample and, therefore, simple random sample techniques for estimating sampling error cannot be applied to these data. The DAS takes into account the complexity of the sampling procedures and calculates standard errors appropriate for such samples. The method for computing sampling errors used by the DAS involves approximating the estimator by the linear terms of a Taylor series expansion. The procedure is typically referred to as the Taylor series method.

Table C1.—Standard errors for table 22: Average loan amount received by full-time, full-year dependent undergraduates who received loans according to type of loan, by financial need status and family income: 1995-96—Continued

	Total student loans	Subsidized student loans	Stafford unsubsidized student loans	PLUS unsubsidized loans*
		No financial need		
Total	72.8	303.1	59.6	348.7
Family income				
Lower income	--	--	--	--
Middle income	120.1	--	100.6	436.4
Higher income	73.6	--	53.4	407.6

*PLUS loans are unsubsidized variable-interest rate loans awarded to parents of dependent students who are able to meet criteria for credit worthiness. PLUS loans are awarded up to the maximum amount of the cost of attendance at the institution minus any other financial aid.

--Sample size too small for reliable estimate.

NOTE: Dependent undergraduates are limited to those who attended only one institution and were U.S. citizens or permanent residents.

SOURCE: U.S. Department of Education, National Center for Education Statistics, 1995-96 National Postsecondary Student Aid Study (NPSAS:96), Undergraduate Data Analysis System.

In addition to tables, the DAS will also produce a correlation matrix of selected variables to be used for linear regression models. Included in the output with the correlation matrix are the design effects (DEFTs) for each variable in the matrix. Since statistical procedures generally compute regression coefficients based on simple random sample assumptions, the standard errors must be adjusted with the design effects to take into account the NPSAS:96 stratified sampling method. (See discussion under "Statistical Procedures" below for the adjustment procedure.)

The DAS can be accessed electronically at www.nces.ed.gov/DAS. For more information about the NPSAS:96 Data Analysis System contact:

Aurora D'Amico
NCES Postsecondary Studies Division
1990 K Street, NW
Washington, DC 20006
(202) 502-7334
Internet address: Aurora.d'amico@ed.gov

STATISTICAL PROCEDURES

The descriptive comparisons were tested in this report using Student's *t* statistic. Differences between estimates are tested against the probability of a Type I error, or significance level. The significance levels were determined by calculating the Student's *t* values for the differences between each pair of means or percentages and comparing these with published tables of significance levels for two-tailed hypothesis testing. Student's *t* values may be computed to test the difference between estimates with the following formula:

$$t = \frac{E_1 - E_2}{\sqrt{se_1^2 + se_2^2}} \qquad (1)$$

where E_1 and E_2 are the estimates to be compared and se_1 and se_2 are their corresponding standard errors. Note that this formula is valid only for independent estimates. When the estimates were not independent (for example, when comparing the percentages across a percentage distribution), a covariance term was added to the denominator of the *t*-test formula:

$$t = \frac{E_1 - E_2}{\sqrt{se_1^2 + se_2^2 - 2(r)se_1se_2}} \qquad (2)$$

where *r* is the correlation between the two estimates.[34] This formula is used when comparing two percentages from a distribution that adds to 100. The estimates, standard errors, and correlations can all be obtained from the DAS.

There are hazards in reporting statistical tests for each comparison. First, comparisons based on large *t* statistics may appear to merit special attention. This can be misleading, since the magnitude of the *t* statistic is related not only to the observed differences in means or percentages but also to the number of students in the specific categories used for comparison. Hence, a small difference compared across a large number of students would produce a large *t* statistic. A second hazard in reporting statistical tests for each comparison occurs when making multiple comparisons among categories of an independent variable. For example, when making paired comparisons among different levels of income, the probability of a Type I error for these comparisons taken as a group is larger than the probability for a single comparison. When more

[34] U.S. Department of Education, National Center for Education Statistics, A Note from the Chief Statistician, no. 2, 1993.

than one difference between groups of related characteristics or "families" is tested for statistical significance, one must apply a standard that assures a level of significance for all of those comparisons taken together. Comparisons were made in this report only when $p<=.05/k$ for a particular pairwise comparison, where that comparison was one of k tests within a family. This guarantees both that the individual comparison would have $p<=.05$ and that for k comparisons within a family of possible comparisons, the significance level for all the comparisons will sum to $p<=.05$.[35]

For example, in a comparison of the percentages of males and females who enrolled in postsecondary education only one comparison is possible (males versus females). In this family, $k=1$, and the comparison can be evaluated without adjusting the significance level. When students are divided into five racial-ethnic groups and all possible comparisons are made, then $k=10$ and the significance level of the each test must be $p<=.05/10$, or $p<=.005$. The formula for calculating family size (k) is as follows:

$$k = \frac{j\,(j-1)}{2} \qquad (3)$$

where j is the number of categories for the variable being tested. In the case of race-ethnicity, there are five racial-ethnic groups (American Indian/Alaskan Native, Asian/Pacific Islander, black, non-Hispanic, Hispanic, and white, non-Hispanic), so substituting 5 for j in equation 3,

$$k = \frac{(5)(5-1)}{2} = 10 \qquad (4)$$

ADJUSTMENT OF MEANS TO CONTROL FOR BACKGROUND VARIATION

Tabular results are limited by sample size when attempting to control for additional factors that may account for the variation observed between two variables. For example, when examining the percentages of those who completed a degree, it is impossible to know to what extent the observed variation is due to low-income status differences and to what extent it is due to

[35]The standard that $p<=.05/k$ for each comparison is more stringent than the criterion that the significance level of the comparisons should sum to $p<=.05$. For tables showing the t statistics required to ensure that $p<=.05/k$ for a particular family size and degrees of freedom, see Olive Jean Dunn, "Multiple Comparisons Among Means," *Journal of the American Statistical Association* 56: 52-64.

differences in other factors related to income, such as type of institution attended, parents' education, and so on. However, if a nested table were produced showing income within type of institution and within parent's education, the cell sizes would be too small to identify the patterns. When the sample size becomes too small to support controls for another level of variation, one must use other methods to take such variation into account.

To overcome this difficulty, multiple linear regression was used to obtain means that were adjusted for covariation among a list of control variables.[36] Adjusted means for subgroups were obtained by regressing the dependent variable on a set of descriptive variables such as gender, race-ethnicity, etc. Substituting ones or zeros for the subgroup characteristic(s) of interest and the mean percentages for the other variables results in an estimate of the adjusted percentage for the specified subgroup, holding all other variables constant. For example, consider a hypothetical case in which two variables, age and gender, are used to describe an outcome, Y (such as completing a degree). The variables age and gender are recoded into a dummy variable representing age and a dummy variable representing gender:

Age	*A*
24 years or older	1
23 or younger	0
Gender	*G*
Female	1
Male	0

The following regression equation is then estimated from the correlation matrix output from the DAS:

$$Y = a + \beta_1 A + \beta_2 G \qquad \textbf{(5)}$$

where Y is the adjusted mean (or percentage); a is the intercept from the regression model; β_1 is the regression coefficient of the dummy variable representing age; and β_2 is the regression coefficient representing gender. To estimate the adjusted mean for any subgroup evaluated at the mean of all other variables, one substitutes the appropriate values for that subgroup's dummy variables (1 or 0) and the mean for the dummy variable(s) representing all other subgroups. For

[36]For more information about least squares regression, see Michael S. Lewis-Beck, *Applied Regression: An Introduction*, vol. 22 (Beverly Hills, CA: Sage Publications, Inc., 1980) and William D. Berry and Stanley Feldman, *Multiple Regression in Practice*, vol. 50 (Beverly Hills, CA: Sage Publications, Inc. 1987).

example, suppose Y represents degree attainments and is being described by age (A) and gender (G), with means as follows:

Variable	*Mean*
A	0.355
G	0.521

Next, suppose the regression equation results in:

$$Y = 0.15 + (0.17)A + (0.01)G \quad \textbf{(6)}$$

To estimate the adjusted value for older students, one substitutes the appropriate parameter estimates and variable values into equation 6.

Variable	Parameter	Value
a	0.15	--
A	0.17	1.000
G	0.01	0.521

This results in:

$$Y = 0.15 + (0.17)(1) + (0.01)(0.521) = 0.325 \quad \textbf{(7)}$$

In this case, the adjusted mean for older students is 0.325 and represents the expected chance of the outcome (in this example, attaining a degree) for older students who look like the average student across the other variables (in this example, gender). In other words, the adjusted percentage of older students who attained a degree is 32.5 percent (0.325 x 100 for conversion to a percentage).

One can produce a multivariate model using the DAS, since one of the output options of the DAS is a correlation matrix, computed using pairwise missing values and weighted to ac

count for sampling design and nonresponse.[37] This matrix can be used by most statistical software packages as the input data for least-squares regression. That is the approach used for this report, with an additional adjustment to incorporate the complex sample design into the statistical significance tests of the parameter estimates (described below). For tabular presentation, parameter estimates and standard errors were multiplied by 100 to match the scale used for reporting unadjusted and adjusted percentages. Most statistical software packages assume simple random sampling when computing standard errors of parameter estimates. Because of the complex sampling design used for NPSAS, this assumption is incorrect. When more precise software is not available, a better approximation of the standard errors is to multiply each standard error by the average design effect associated with the dependent variable (DEFT),[38] where the DEFT is the ratio of the true standard error to the standard error computed under the assumption of simple random sampling. It is calculated by the DAS and is part of the correlation matrix output file.

[37] Although the DAS simplifies the process of making regression models, it also limits the range of models. Analysts who wish to use other than pairwise treatment of missing values to estimate probit/logit models (which are the most appropriate for models with categorical dependent variables) can apply for a restricted data license from NCES. See John H. Aldrich and Forrest D. Nelson "Linear Probability, Logit and Probit Models," *Quantitative Applications in the Social Sciences*, vol. 45. (Beverly Hills, CA: Sage University Press, 1984).

[38] The adjustment procedure and its limitations are described in C. J. Skinner, D. Hold, and T. M. F. Smith (eds.). *Analysis of Complex Surveys*. (New York: John Wiley & Sons, 1989).

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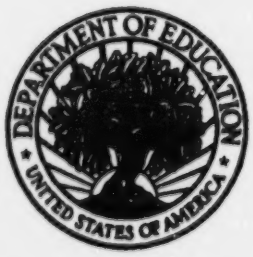

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